DOCUMENT RESUME

ED 129 487 RC 009 439

TITLE	Bureau of Indian Affairs Student Enrollment System Design Plan. Research and Evaluation Report Series No. 33.00.
INSTITUTION	General Services Administration, Region 7, Ft. Worth, Tex.
SPONS AGENCY	Bureau of Indian Affairs (Dept. of Interior), Washington, D.C.
REPORT NO	RER-33.00
PUB DATE	Feb 75
NOTE	83p.
EDRS PRICE	MF-$0.83 HC-$4.67 Plus Postage.
DESCRIPTORS	*American Indians; *Computer Oriented Programs; *Data Processing; Flow Charts; *Information Systems; Input Output; *Program Design; Records (Forms); *Student Enrollment; Student Records; Systems Development
IDENTIFIERS	BIA; *Bureau of Indian Affairs

ABSTRACT

The Student Enrollment System (SES) is an attempt to build a basic computerized system for collecting, storing, and reporting authorized data on all students attending Bureau of Indian Affairs (BIA) schools. This authorized data would include: the student's personal attributes--name, sex, address; current school information--school code, grade, enrollment type, enrollment data, bus route, etc.; termination information-transaction date and code; prior school information--school code; birth information--date, verification, and location; relationships; tribal information--home agency, primary and secondary tribal affiliations and degree of Indian blood; and additional identification codes--family and enrollment/census numbers. SES system application programs will be written in the COBOL programming language. In order to ensure file security, all disk/tape files necessary to maintain the system will be located at the U.S. Geological Survey - Computer Center Division in Washington, D.C. Primary objective of this plan is to provide the BIA with general time, cost, and resource information needed to design, implement, operate, and evaluate the SES system. This design plan covers the input/output documentation, general program logic, edit criteria, general system functional flow, file descriptions, and implementation plan. (NQ)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

Research and Evaluation Report

Series No. 33.00

ED129487

BUREAU OF INDIAN AFFAIRS

STUDENT ENROLLMENT SYSTEM

DESIGN PLAN

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Compiled By

GENERAL SERVICES ADMINISTRATION
REGION 7
FORT WORTH, TEXAS
FEBRUARY 1975

RC009439

FOR
BUREAU OF INDIAN AFFAIRS
OFFICE OF INDIAN EDUCATION PROGRAMS
WASHINGTON, DC 20245

UNITED STATES DEPARTMENT OF THE INTERIOR
Rogers C. B. Morton, Secretary

BUREAU OF INDIAN AFFAIRS
Morris Thompson, Commissioner

OFFICE OF INDIAN EDUCATION PROGRAMS
Clennon E. Sockey, Director

INDIAN EDUCATION RESOURCES CENTER
William J. Benham, Administrator

DIVISION OF EVALUATION, RESEARCH, AND DEVELOPMENT
Thomas R. Hopkins, Chief

Charles V. Burnett
Student Enrollment System Project Director

Indian Education Resources Center
P.O. Box 1788
123 Fourth Street, SW.
Albuquerque, New Mexico 87103

BUREAU OF INDIAN AFFAIRS

STUDENT ENROLLMENT SYSTEM

DESIGN PLAN

FEBRUARY 1975

TABLE OF CONTENTS

PAGE

I. SYSTEM DESCRIPTION

A. Introduction - - - - - - - - - - - - - - - - - 1

B. Background - - - - - - - - - - - - - - - - - - 2

C. System Goals - - - - - - - - - - - - - - - - - 3

D. Summary System Design - - - - - - - - - - - - 4

II. INPUT/OUTPUT DOCUMENTATION

A. Input Forms - - - - - - - - - - - - - - - - - 6

B. Output Forms/Reports - - - - - - - - - - - - 10

C. Input/Output Document Summary - - - - - - - 22

D. Document Flow Charts - - - - - - - - - - - - 26

E. Computer Output Microform -
Analysis and Recommendations - - - - - - - - 33

III. GENERAL PROGRAM LOGIC

A. Data Manipulation Programs - - - - - - - - - 42

B. Report Programs - - - - - - - - - - - - - - - 44

C. File Maintenance Programs - - - - - - - - - 45

IV. EDIT CRITERIA

A. Pre-Edit Process - - - - - - - - - - - - - - 46

B. Update Edit Process - - - - - - - - - - - - 49

C. Special Conditional Checks - - - - - - - - - 50

D. Input File Processing Order - - - - - - - - 56

PAGE

V. GENERAL SYSTEM FUNCTIONAL FLOW - - - - - - - - 57

VI. FILE DESCRIPTIONS - - - - - - - - - - - - - - - 59

VII. IMPLEMENTATION PLAN - - - - - - - - - - - - - - 73

6

I. SYSTEM DESCRIPTION

A. INTRODUCTION

At the request of the Indian Education Resources Center, (IERC) Albuquerque, New Mexico, this Design Plan has been prepared by the General Services Administration, Automated Data and Telecommunications Service, Fort Worth, Texas.

The primary objective of this plan is to provide the Bureau of Indian Affairs with general time, cost, and resource information needed to design, implement, operate, and evaluate the Student Enrollment System as previously defined by the IERC office. More specifically, the scope of activities under this agreement provides for:

- A basic development plan displaying event/time/cost, and resource information at detailed task levels. (Note: this has been forwarded to IERC under separate cover)

- The identification of necessary implementation materials - design of input/output forms, document/system flows, file definitions/layouts, etc.

- Creation of a basic computerized system to collect, store, and report authorized data on all students in the BIA school system.

- The identification of Analyst/Programmer(s) logical steps in meeting project goals, thus assuring effective controls for mutual understanding during all phases of development. As development tasks are completed, this plan may require refinements as more specific information emerges. These refinements will be incorporated in a timely fashion based on close coordination between BIA and GSA.

B. BACKGROUND

The period from September 18, 1974, through January 17, 1975, was invested in coordination, detailed analysis, and documentation of accumulated information. This included:

- System goals (as specified by IERC, Albuquerque)
- Source document design and creation
- Reports:

  School Level Student Rosters

  IERC Level Statistical Outputs

  ADP System Integrity
- Operational plan
- ADP system design

The GSA development team extends their gratitude to the IERC office for its assistance, review, and suggestions during all phases of this plan.

C. SYSTEM GOALS

The Student Enrollment System is an attempt to build a basic computerized system for collection of authorized data on all students attending BIA schools. This data includes the minimum necessary to identify each student:

1. Personal Attributes - name, sex, address, etc.
2. Current School Information - school code, grade, enrollment type, enrollment data, bus route, etc.
3. Termination Information - transaction date and code
4. Prior School Information - school code
5. Birth Information - date, verification, and location
6. Relationships
7. Tribal Information - home agency, primary and secondary tribal affiliations and degree of Indian blood
8. Additional Identification Codes - family and enrollment/census numbers.

Security of student data is a vital factor influencing preliminary system design and subsequent phases of development/implementation. For this reason, GSA has and will continue to collaborate closely with BIA to insure all necessary data controls and system security measures are considered.

Flexibility to add new data elements or new records with minimum reprogramming and file reconstruction are also important design objectives.

D. SUMMARY SYSTEM DESCRIPTION

SES system application programs will be written in the COBOL programming language, and operated on the U. S. Geological Survey - Computer Center Division owned IBM 360/65 computer in Washington, D. C. Likewise, all disk/tape files necessary to maintain the system will be located at this installation. This environment is capable of providing all necessary measures to ensure file security.

Four major independent processing steps are envisioned:

- Data Pre-edit
- Master File Updating
- Reporting
- Supportive File Maintenance

Data for the system will be submitted via the postal service by representatives from various schools to the IERC. Primary responsibility for validity of data submitted will rest on the school representatives. IERC personnel will perform spot checks on the incoming data to ensure compliance with coding conventions. There will be instances when IERC personnel, after conferring with proper school representatives, will have to either correct data or enter additional data.

The data is then forwarded to the Administrative Services Center (ASC) in Albuquerque. Here it will be collected by key-to-tape processing and transmitted, via telecommunication transmission, to the USGS IBM 360/65 in Washington. The above two tasks, along with application program runs, will be accomplished by the ASC's in-house Mohawk 2400 computer system, and the Federal Telephone System (FTS) voice grade telecommunication network.

Output data and reports will be obtained, via telecommunication transmission, on the ASC Mohawk 2400 magnetic tapes or on-line printer. Data and/or reports received on magnetic tape can be printed at a later period either on the ASC Mohawk 2400 or CDC 3170 computers. Output to be contained on microfiche must be recorded on magnetic tape for COM processing. The IERC, at a future date, will coordinate their own contracting for COM services.

After all reports have been collected, printed, or microfiched, they are sent to the IERC. They will then be distributed to the schools or other destinations as required.

When data errors have been found through the pre-edit, update or special programs, respective error reports will be produced and forwarded to the IERC. Personnel from IERC will be responsible for reconciling the errors, coding the corrections, and submitting them in the next update cycle.

Schools will submit available student data on weekly cycles. Machine update processing will be on the same weekly cycles, with additional update runs on an as-demand basis. Normal computer output reporting will be on monthly cycles, year-end, and as-demand basis.

Supportive file maintenance will be performed on an as-demand basis.

II. INPUT/OUTPUT DOCUMENTATION

A. INPUT FORMS

The following forms were designed as standard pre-printed input documents:

1. Student Enrollment Form

2. SES Change Form

3. Monthly Absences Form

In addition, two computer output listings will be used for input as well as output documents:

1. Student Roster - Students Completing Highest Level of Instruction

2. Student Roster - Anticipated Enrollment

Complete descriptions of pre-printed forms are presented in the User's Manual - - the two computer printed listings are described below:

- Student Roster - Students Completing Highest Level of Instruction - This is a listing printed near the end of the school year. It shows only students who are expected to complete the highest level of instruction at their respective schools. A blank field is printed in which the school code is entered for the next school the student is expected to attend. Original copies are submitted to the IERC for further processing. New, or anticipated, school codes will be used in producing the Anticipated Enrollment Roster discussed below.

- Student Roster - Anticipated Enrollment - This is a listing printed after year-end update processing has been completed. These listings are mailed to the schools to serve a dual purpose - to show what students are expected to re-enroll at each school, and to be used as an input document reflecting which students did not return ("No-Shows") to their previously specified schools. These "No-Shows" are simply lined through in yellow on the original copy which is then submitted to the IERC for further processing.

STUDENT ENROLLMENT FORM

SUBMITTING SCHOOL CODE

FILE NUMBER 9 9 9 9 9 9

SUBMITTING DATE

STUDENT IDENTIFICATION

1

100 SURNAME (LAST OR FAMILY)

102 FIRST

104 MIDDLE

106 SUF

108 SEX

2

110 HOME ADDRESS (STREET, P.O. BOX, ETC.)

112 CITY

114 ST

116 ZIP CODE

CURRENT SCHOOL INFORMATION

SCHOOL CODE

120 ENTRY DATE (MO-DY-YR)

121 ENTRY TYPE

122 GRD/YR

123 STD TYPE

124 ADM CRIT

125 COMP CODE

126 BUS ROUTE

127 BUS STOP

TERMINATION INFORMATION (WITHDRAWAL/TRANSFER/GRADUATE)

3

130 W/T/G DATE (MO-DY-YR)

132 W/T/G CODE

PRIOR SCHOOL INFORMATION

140 PRIOR SCH CODE

PRIOR SCH NAME

BIRTH INFORMATION

200 DATE OF BIRTH (MO-DY-YR)

202 VERIFY CODE

204 PLACE-CITY

ST

RELATIONSHIPS (PARENTS OR GUARDIAN)

4

210 LAST NAME

211 FIRST

RELSHP

5

215 LAST NAME

216 FIRST

217 RELSHP

6

220 ADDRESS (STREET, P.O. BOX, ETC.)

222 CITY

224 ST

226 ZIP CODE

228 PHONE NO.

TRIBAL INFORMATION

230 HOME AGENCY

232 PRIMARY TRBL AFFIL

234 SECND TRBL AFFIL

236 DEGREE BLOOD

7

IDENTIFICATION NUMBERS (IF KNOWN)

240 FAMILY NO.

242 ENROLL/CENS NO.

13

BIA-SES FORM 1A

R

STUDENT ENROLLMENT FORM

SUBMITTING SCHOOL CODE — FILE NUMBER — SUBMITTING DATE

STUDENT IDENTIFICATION

1

100 SURNAME (LAST OR FAMILY)

102 FIRST — 104 MIDDLE — 106 SUF — 108 SEX

2

110 HOME ADDRESS (STREET, P.O. BOX, ETC.)

112 CITY — 114 ST — 116 ZIP CODE

CURRENT SCHOOL INFORMATION

SCHOOL CODE — 120 ENTRY DATE (MO-DY-YR) — 121 ENTRY TYPE — 122 GRD/YR — 123 STD TYPE

124 ADM CRIT — 125 COMP CODE — 126 BUS ROUTE — 127 BUS STOP

TERMINATION INFORMATION (WITHDRAWAL/TRANSFER/GRADUATE)

3

130 W/T/G DATE (MO-DY-YR) — 132 W/T/G CODE

PRIOR SCHOOL INFORMATION

140 PRIOR SCH CODE — PRIOR SCH NAME

BIRTH INFORMATION

200 DATE OF BIRTH (MO-DY-YR) — 202 VERIFY CODE — 204 PLACE-CITY — 209 ST

RELATIONSHIPS (PARENTS OR GUARDIAN)

4

210 LAST NAME — 211 FIRST — 212 RELSHP

5

215 LAST NAME — 216 FIRST — 217 RELSHP

6

220 ADDRESS (STREET, P.O. BOX, ETC.)

222 CITY — 224 ST — 226 ZIP CODE — 228 PHONE NO.

TRIBAL INFORMATION

7

230 HOME AGENC — 232 PRIMARY TRBL AFFIL — 234 SECND TRBL AFFIL — 236 DEGREE BLOOD

IDENTIFICATION NUMBERS (IF KNOWN)

240 FAMILY NO. — 242 ENROLL/CENS NO.

14

BIA-SES FORM 18

SUBMITTING
2 SCHOOL CODE

SUBMISSION DATE: _____

SES CHANGE FORM

7 FILE NUMBER

13 DATA BLOCK NUMBER

16 CORRECTED DATA

BIA - SES FORM 2

1
M

MONTHLY ABSENCES FORM

2 SUBMITTING SCHOOL CODE

SUBMISSION DATE: _____

AGGREGATE ABSENCES BY STUDENT TYPES

REPORT PERIOD 7 MO	YR	DAYS IN 11 SESSION	13 DAY	18 BOARD	23 DORM	28 NON-BUREAU

NOTE: 1) DAYS IN SESSION - SHOULD CONTAIN THE TOTAL NUMBER OF DAYS THE SCHOOL WAS IN SESSION DURING THE MONTHLY REPORTING PERIOD.

2) AGGREGATE SCHOOL ABSENCES - SHOULD CONTAIN THE TOTALS OF ALL STUDENT ABSENCES DURING THE REPORT PERIOD.

BIA-SES FORM 3

B. OUTPUT FORMS/REPORTS

The following examples show the various reports produced from the SES. As indicated in Section II-A, some of the output reports serve also as input documents. One additional output report - the Student Record - is not in itself an input document, however, it is used in conjunction with an input process. Whenever a change occurs to a student's data, this change is annotated on the Student Record and recorded on the SES Change Form. The SES Change Form is submitted to the IERC for further processing. The annotated Student Record is retained at the school. An updated Student Record is produced from the computer update run and returned to the school, replacing the old Student Record.

Refer to Section II-C for further information on all input/output documents.

BIA STUDENT ENROLLMENT SYSTEM

ABERDEEN AREA — STUDENT ROSTER BY AREA/NAME — AS OF DEC 31, 1975

********** STUDENT NAME **********	FILE NUMBER	SEX	DATE OF BIRTH	STUDENT TYPE	STUDENT GRADE	SCHOOL CODE	ENTRY DATE	W/T/G CODE	W/T/G DATE
ADAMLY, BEVERLY ANN	678106	F	06-24-68	DY	G01	A01-04	09-01-75		
ADAMS, JOHN M.	134375	M	10-24-69	DY	K01	A01-04	09-01-75		
ARDINGTON, MARY KATHRYN	589599	F	11-05-56	BD	G13	A01-08	11-13-75		
ASTER, DAVID P. III	123767	M	02-27-68	DY	G01	A01-04	09-01-75	TNS	12-22-75
ATWELL, ROBERT JENNINGS	246903	M	04-12-69	DY	K01	A01-04	09-01-75	NSH	09-15-75
BENJAMIN, JACKIE KAY	000202	F	12-01-68	DY	G01	A01-04	09-01-75		
BOPPER, ALICE JUNE	002432	F	03-17-62	NB	G06	A01-06	08-29-75		
BOTTOMLY, CYNTHIA ANN	037604	F	06-30-69	DY	K01	A01-04	09-01-75		
BRADENFIELD, WILLIAM CHARLES, JR	505812	M	07-01-70	NB	K01	A01-04	09-01-75		
BUTTERFIELD, JULIE ROSE	431056	F	12-23-70	DY	K01	A01-04	09-01-75		
BUWALER, BUFORD T.	029129	M	05-14-58	BD	G10	A01-06	08-29-75		
CARR, GLEN OWEN, JR	030452	M	08-24-68	NB	G01	A01-04	09-01-75		
CARTER, BEDFORTH SETH	987754	M	08-10-67	DY	G01	A01-04	09-01-75	WDL	10-13-75
CASTER, ELIZABETH JOYCE	044044	F	11-01-59	DM	G09	A01-06	12-05-75		
CHRISTIANSON, BETTY JO	675838	F	08-30-69	DY	K01	A01-04	09-01-75		
CONNER, FRANK WELDON II	289635	M	10-16-70	DY	K01	A01-04	09-01-75	WDL	09-23-75
CONNER, GLORIA DIANE	555466	F	04-10-69	NB	K01	A01-04	09-01-75		
CONWELL, DOUGLAS PATRICK	134267	M	12-09-69	DY	K01	A01-04	09-01-75		
GRANT, BOB G.	762034	M	01-23-57	DM	G12	A01-08	09-03-75	GRD	12-30-75
JONES, BETTY LYNN	532198	F	09-05-68	DY	G01	A01-04	09-01-75		
JONES, CHARLES ROBERT, JR	009599	M	02-01-55	PT	G14	A01-08	09-05-75		
JONES, CYNTHIA ANN	044022	F	09-28-58	DY	G11	A01-06	10-01-75	TNS	10-19-75
KAEMMERLING, ANNA SUE	876589	F	11-11-68	DY	G01	A01-04	09-01-75		
KAYSER, ALBERT BRENT	220681	M	12-06-68	DY	G01	A01-04	09-01-75		
SITTER, RANDOLPH GRANT II	445360	M	01-01-68	DY	G01	A01-04	09-01-75	NSH	09-15-75
SOUTHARD, SUSAN SHELLY	333922	F	10-02-63	NB	G05	A01-06	08-29-75		
WILSON, REBECCA MIDDLETON	389212	F	02-22-67	NB	G01	A01-04	09-01-75		
WOOLEY, WILLIAM WILBERT III	400850	M	12-20-66	DY	G03	A01-06	11-03-75		

TOTAL IN MEMBERSHIP STATUS FOR AREA 1123

TOTAL IN W/T/G STATUS FOR AREA 27

BIA STUDENT ENROLLMENT SYSTEM

MONTHLY ENROLLMENT REPORT - ELEMENTARY AND SECONDARY FOR SEP 1975

ABERDEEN AREA

	******* DAY STUDENTS ********				***** BOARDING STUDENTS *****				**** DORMITORY STUDENTS *****				****** TOTAL STUDENTS *******			
	AV DLY ATTD	AV DLY MEMB	FOM MEMB	TO-DATE ENRL	AV DLY ATTD	AV DLY MEMB	FOM MEMB	TO-DATE ENRL	AV DLY ATTD	AV DLY MEMB	FOM MEMB	TO-DATE ENRL	AV DLY ATTD	AV DLY MEMB	FOM MEMB	TO-DATE ENRL
CHEYENNE RIVER AGENCY																
BRIDGER DAY SCHOOL																
	24.6	26.8	29	29									24.6	26.8	29	29
CHERRY CREEK DAY SCHOOL																
	105.1	114.0	123	124									105.1	114.0	123	124
CHEYENNE-EAGLE BUTTE SCHOOL																
	571.5	573.7	572	573	98.0	101.8	101	103					669.5	671.7	673	676
TOTAL FOR AGENCY																
	701.2	714.5	724	726	98.0	101.8	101	103					799.2	812.5	825	829
FORT BERTHOLD AGENCY																
MANDAREE DAY SCHOOL																
	102.0	104.0	104	104									102.0	104.0	104	104
RUNNING DEER BOARDING SCHOOL																
					76.5	81.3	87	89	54.0	57.0	57	57	130.5	138.3	144	146
TOTAL FOR AGENCY																
	102.0	104.0	104	104	76.5	81.3	87	89	54.0	57.0	57	57	232.5	242.3	248	250
TOTAL FOR AREA																
	803.2	818.5	828	830	174.5	183.1	188	192	54.0	57.0	57	57	1031.7	1054.8	1073	1079

NOTE: Totals for Bureau on separate page

BIA STUDENT ENROLLMENT SYSTEM
MONTHLY ENROLLMENT REPORT - ELEMENTARY AND SECONDARY
ABERDEEN AREA

FOR SEP 1975

******** SCHOOL *********	**** NON-BUREAU STUDENTS **** AV DLY ATTD	AV DLY MEMB	EOM MEMB	TO-DATE ENRL
CHERRY CREEK DAY SCHOOL	0.9	1.0	1	1
CHEYENNE-EAGLE BUTTE SCHOOL	222.0	222.6	222	223
MANDAREE DAY SCHOOL	2.8	3.0	3	3
TOTAL FOR AREA	225.7	226.6	226	227

NOTE: Totals for Bureau on separate page

BIA STUDENT ENROLLMENT SYSTEM
MONTHLY ENROLLMENT REPORT - POST-SECONDARY

FOR SEP 1975

********** SCHOOL **********	AV DLY MEMB	EOM MEMB	TO-DATE ENRL
HASKELL INDIAN JUNIOR COLLEGE	1142.8	1124	1154
SOUTHWESTERN INDIAN POLYTECHNIC INSTITUTE	310.8	509	586
INSTITUTE OF AMERICAN INDIAN ARTS	93.3	102	115
TOTAL FOR BUREAU	1546.9	1735	1855

BIA STUDENT ENROLLMENT SYSTEM
YEAR-END ENROLLMENT REPORT - ELEMENTARY AND SECONDARY FOR 1975-76 SCHOOL YEAR
ABERDEEN AREA
CHEYENNE RIVER AGENCY
CHERRY CREEK DAY SCHOOL

GRADE :	B	K	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	TOTAL
DAY STUDENTS															
AVR DLY MEMB	11.8	13.2	16.0	14.5	15.5	19.4	19.6	11.8							121.8
END-YR MEMB	12	15	16	15	16	20	19	12							125
TO-DATE ENRL	14	16	16	17	18	20	21	14							136
BOARDING STUDENTS															
AVR DLY MEMB															
END-YR MEMB															
TO-DATE ENRL															
DORMITORY STUDENTS															
AVR DLY MEMB															
END-YR MEMB															
TO-DATE ENRL															
TOTAL STUDENTS															
AVR DLY MEMB	11.8	13.2	16.0	14.5	15.5	19.4	19.6	11.8							121.8
END-YR MEMB	12	15	16	15	16	20	19	12							125
TO-DATE ENRL	14	16	16	17	18	20	21	14							136
NON-BUREAU STUDENTS															
AVR DLY MEMB					1		0.7								1.7
END-YR MEMB					1		1								2
TO-DATE ENRL					1		1								2

NOTE: Totals for agency on separate page
Totals for area on separate page
Totals for Bureau on separate page

BIA STUDENT ENROLLMENT SYSTEM

YEAR-END ENROLLMENT REPORT - POST-SECONDARY

FOR 1975-76 SCHOOL YEAR

GRADE :	13TH	14TH	TOTAL
HASKELL INDIAN JUNIOR COLLEGE			
AVR DLY MEMB	641.8	511.6	1153.4
END-YR MEMB	598	502	1100
TO-DATE ENRL	667	523	1190
SOUTHWESTERN INDIAN POLYTECHNIC INSTITUTE			
AVR DLY MEMB	324.2	264.5	588.7
END-YR MEMB	300	255	555
TO-DATE ENRL	350	270	620
INSTITUTE OF AMERICAN INDIAN ARTS			
AVR DLY MEMB	58.3	47.1	105.4
END-YR MEMB	56	44	100
TO-DATE ENRL	65	55	120
TOTAL FOR BUREAU			
AVR DLY MEMB	1024.3	823.2	1847.5
END-YR MEMB	954	801	1755
TO-DATE ENRL	1082	848	1930

BIA STUDENT ENROLLMENT SYSTEM
ENROLLMENT BY AREA/TRIBE
ABERDEEN AREA

AS OF MAY 31, 1976

TRIBAL NAME	DEGREE OF BLOOD: ONE-FOURTH	ONE-HALF	THREE-FOURTHS	FULL-BLOOD	TOTAL
ARAPAHO	5	19	6	23	55
ASSINIBOINE	5	5	3	6	19
BLACKFEET	7	30	10	32	79
CHEROKEE		1		1	2
CHEYENNE	1	2	1	5	9
CHIPPEWA	49	53	30	47	179
CHOCTAW			1		1
CREEK	1				1
CROW	5	20	11	28	64
HOPI			1		1
PUEBLO	30	20	40	50	140
SAC AND FOX	11	20	10	20	61
SEMINOLE	4	65	3	75	152
SENECA	15	3	22	6	46
SHOSHONE	20	40	25	48	133
SIOUX	145	100	155	105	405
UTE	8	13	10	12	43
WARM SPRINGS	5	22	7	24	58
WINNEBAGO	12	13	20	19	64
YAKIMA	4	8	7	14	33
TOTAL FOR AREA	356	284	226	341	1217

NOTE: Totals for Bureau on separate page

BIA STUDENT ENROLLMENT SYSTEM
WITHDRAWAL/TRANSFER/GRADUATION REPORT
CHOCTAW AREA
CHOCTAW CENTRAL SCHOOL

AS OF MAY 31, 1976

W/T/G CODE	B	K	1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH	11TH	12TH	13TH	14TH	TOTAL
W10						1		2		2	2						7
W20							2			3	1						6
W30						1				5							6
W40									1								1
T10						2				1	3						6
T20							1		2		1						4
T30								1									1
G10											34						34

NOTE: Totals for area on separate page
Totals for Bureau on separate page

BIA STUDENT ENROLLMENT SYSTEM
SCHOOL ENROLLMENT BY AREA/AGENCY
ABERDEEN AREA

AS OF MAY 31, 1976

CHEYENNE RIVER AGENCY

A01-03	203	A01-04	562	A01-06	120	A01-07	348	A01-08	240	A01-10	655	A01-11	186	A01-12	406	A02-01	34
A04-03	502	A04-04	103	A04-05	460	A05-03	1006	A06-02	56	A06-05	281						

TOTAL IN ENROLLED STATUS FOR AGENCY 5473

FORT BERTHOLD AGENCY

A01-03	12	A01-08	123	A02-01	56	A07-10	346

TOTAL IN ENROLLED STATUS FOR AGENCY 537

PINE RIDGE AGENCY

A01-11	44	A04-03	52	A06-02	109

TOTAL IN ENROLLED STATUS FOR AGENCY 205

ROSEBUD AGENCY

A07-10	360

TOTAL IN ENROLLED STATUS FOR AGENCY 360

.
.
.

LOWER BRULE AGENCY

A06-02	342	A07-10	45	A15-02	584

TOTAL IN ENROLLED STATUS FOR AREA 971

TOTAL IN ENROLLED STATUS FOR AREA 9,467

NOTE: Total for Bureau on separate page

Above figures reflect students served by home agency

BIA STUDENT ENROLLMENT SYSTEM

STUDENT ROSTER - STUDENTS COMPLETING HIGHEST LEVEL OF INSTRUCTION

AS OF APRIL 15, 1975

ABERDEEN AREA

SCHOOL CODE : A01-04

CHERRY CREEK DAY SCHOOL

FILE NUMBER	NEW-SCHOOL CODE	********** STUDENT NAME **********	SEX	DATE OF BIRTH	STUDENT TYPE
239516		ALVAREZ, PAUL T.	M	12-20-64	DY
083526		BURNETT, CHARLES C. JR	M	10-16-64	NB
977657		CUNNINGHAM, DELORES ANN	F	06-11-63	DY
428556		DAVIES, BRENDA SUE	F	02-01-64	DY
766664		FLEMMING, RHONDA B.	F	05-17-64	DY
330045		FURTHINGTON, ROBERT X. III	M	11-29-63	DY
523064		SMITH, SUZIE KAY	F	03-05-64	NB
702500		THOMPSON, ANGELA BETH	F	04-15-64	DY
667766		WALKER, SARAH JEAN	F	08-30-63	DY

NOTE: For students completing highest level of instruction below 12th grade
No totals

BIA STUDENT ENROLLMENT SYSTEM
STUDENT ROSTER - STUDENTS COMPLETING HIGHEST LEVEL OF INSTRUCTION
ABERDEEN AREA

AS OF APRIL 15, 1975

SCHOOL CODE : A01-08

Standing Rock School

FILE NUMBER	W/T/G CODE	********** STUDENT NAME **********	SEX	DATE OF BIRTH	STUDENT TYPE
239516		ALVAREZ, PAUL T.	M	12-20-64	DY
083526		BURNETT, CHARLES C. JR	M	10-16-64	NB
977657		CUNNINGHAM, DELORES ANN	F	06-11-63	DY
628554		DAVIES, BRENDA SUE	F	02-01-64	DY
766664		FLEMMING, RHONDA B.	F	05-17-64	DY
330045		FURTHINGTON, ROBERT X. III	M	11-20-63	DY
523064		SMITH, SUZIE KAY	F	03-05-64	NB
702500		THOMPSON, ANGELA BETH	F	04-15-64	DY
667766		WALKER, SARAH JEAN	F	08-30-63	DY

NOTE: For students completing 12th grade or post-secondary instruction
No totals

BIA STUDENT ENROLLMENT SYSTEM
STUDENT ROSTER - ANTICIPATED ENROLLMENT
CHOCTAW AREA
CHOCTAW CENTRAL SCHOOL

SCHOOL CODE : C01-05

AS OF JULY 01, 1975

	FILE NUMBER	PRIOR-SCHOOL CODE	********** STUDENT NAME **********	SEX	DATE OF BIRTH	STUDENT TYPE
GRADE : G04	134754	C01-07	ADAMS, JOHN M.	M	10-24-65	DY
	246032	C01-07	ATWELL, ROBERT JENNINGS	M	04-12-65	DY
	137040	C01-07	BOTTOMLY, CYNTHIA ANN	F	06-30-65	DY
	505123	C01-07	BRADENFIELD, WILLIAM CHARLES, JR	M	07-01-66	NB
	431561	A01-05	BUTTERFIELD, JULIE ROSE	F	12-23-66	DY
	675386	C01-07	CHRISTIANSON, BETTY JO	F	08-30-65	DY
	289354	C01-02	CONNER, FRANK WELDON II	M	10-16-66	DY
	555668	A01-05	CONNER, GLORIA DIANE	F	04-10-65	NB
	134679	C01-07	CONWELL, DOUGLAS PATRICK	M	12-09-65	DY
GRADE : G05	678067		ADAMLY, BEVERLY ANN	F	06-24-64	DY
	123676	A01-05	ASTER, DAVID P. III	M	02-27-64	DY
	100028		BENJAMIN, JACKIE KAY	F	12-01-64	NB
	130529		CARR, GLEN OWEN, JR	M	08-24-64	DY
	987540		CARTER, BILL	M	08-10-65	DY
	532982	C03-04	JONES, BETTY LYNN	F	09-05-64	DY
	876893		KATER, ANNA SUE	F	11-11-64	DY
	220815		KAYSER, BETTY LYNN	F	12-06-65	NB
GRADE : G06	100241		ADLEY, CARL T.	M	02-22-63	DY
	213024		BAKER, CINDY ELIZABETH	F	09-02-63	DY

NOTE: No roster for 1st year college students

No totals

C. INPUT/OUTPUT DOCUMENT SUMMARY

The following summary contains the names, frequencies, number of copies, distributions, and estimated volumes of all input and output documents for the Student Enrollment System. In the case of output documents, the media used (hardcopy, pre-printed forms, microfiche) is also specified. For microfiche output, it is assumed that one microfiche contains 250-270 computer pages of data (see Section II-E of this manual for additional microfiche information).

INPUT DOCUMENTS

Document Name	Frequency	No. of Copies	Distribution	Estimated Volumes
1. Student Enrollment Form	Weekly (Whenever new student enrolls or former student re-enrolls)	2 per student (Original and carbon)	Original: from school to IERC Carbon: filed at school	200 - 4,000 forms 3,000 - 160,000 data fields (This will fluctuate greatly during the school year)
2. SES Change Form	Weekly (Whenever student information changes)	2 per school (Original and carbon)	Original: from school to IERC Carbon: filed at school	70 forms 2,800 data fields
3. Monthly Absences Form	Monthly	2 per school (Original and carbon)	Original: from school to IERC Carbon: filed at school	200 forms 1,400 data fields
4. Student Roster - Students Completing Highest Level of Instruction *	Annually (Mid-May)	2 per school (Original and carbon)	Original: from school to IERC Carbon: filed at school	200 computer pages 20,000 data fields
5. Student Roster - Anticipated Enrollment*	Annually (Mid-Sept.)	2 per school (Original and carbon)	Original: from school to IERC Carbon: filed at school	1,000 computer pages 5,000 data fields

* Both Input and Output

OUTPUT DOCUMENTS

Document Name	Frequency	No. of Copies	Distribution	Medium	Estimated Volumes
1. Student Record	Weekly	1	Schools (via IERC)	Pre-Printed Form	500 - 4,000 pages (This will fluctuate greatly during the school year)
2. Student Roster by Area/Name	Monthly	215	IERC, area offices, schools	Microfiche	4 microfiche per copy (860 total microfiche)
3. Monthly Enrollment Report	Monthly	2	IERC (which will reproduce and distribute to area and agency offices)	Hardcopy and carbon	20 pages per copy (40 total pages)
4. Year-End Enrollment Report	Annually (End of School Yr.)	15	C.O., IERC, area offices	Microfiche	2 microfiche per copy (30 total microfiche)
5. Enrollment by Area/Tribe	Annually (End of school Yr.)	3	C.O., IERC, area offices	Hardcopy and carbons	13 pages per copy (39 total pages)
6. School Enrollment by Area/Agency	Annually (end of school Yr.)	3	C.O., IERC, area offices	Hardcopy and carbons	15 pages per copy (45 total pages)
7. Withdrawal/Transfer/ Graduation Report	Annually (End of school Yr.)	215	IERC, area offices, schools	Microfiche	1 microfiche per copy (215 total microfiche)

OUTPUT DOCUMENTS

Document Name	Frequency	No. of Copies	Distribution	Medium	Estimated Volumes
8. Student Roster - Students Completing Highest Level of Instruction *	Annually (Mid-April)	2	Schools (via IERC)	Hardcopy and carbon	200 pages per copy (400 total pages)
9. Student Roster - Anticipated Enrollment*	Annually (July)	2	Schools (via IERC)	Hardcopy and carbon	1,000 pages per copy (2,000 total pages)
10. Edit Error Report	Each system run	1	IERC	Hardcopy	1 - 5 pages
11. Update Error Report	Weekly (Each update cycle)	1	IERC	Hardcopy	1 - 3 pages
12. Monthly Absences Error Report	Monthly	1	IERC	Hardcopy	1 page

* Both Input and Output

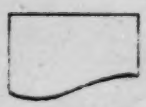
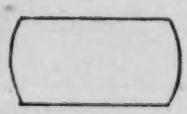
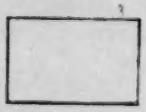
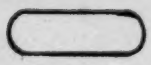
D. DOCUMENT FLOW CHARTS

The following charts depict the flow of the various input and output documents throughout the Student Enrollment System. A separate flow chart is provided for:

1. New-Year Enrollment Procedure
2. Weekly Reporting Procedure
3. Monthly Reporting Procedure
4. Year-End Procedure
5. Next School Year's Anticipated Enrollment Procedure

Symbols used to represent different steps in the flow charts are explained in the legend below.

FLOW CHART LEGEND

Symbol	Meaning
	Document (input or output, paper or microfiche)
	Manual operation (data entry by schools, data correction by IERC, etc.)
	Key-to-tape operation
	Computer operation
	Magnetic tape
	File
	Location (school, IERC, area office, etc.)

FLOW CHART LEGEND (CONT'D)

Symbol	Meaning
	Flow connector
	Supplemental information
	Decision (yes or no, etc.)

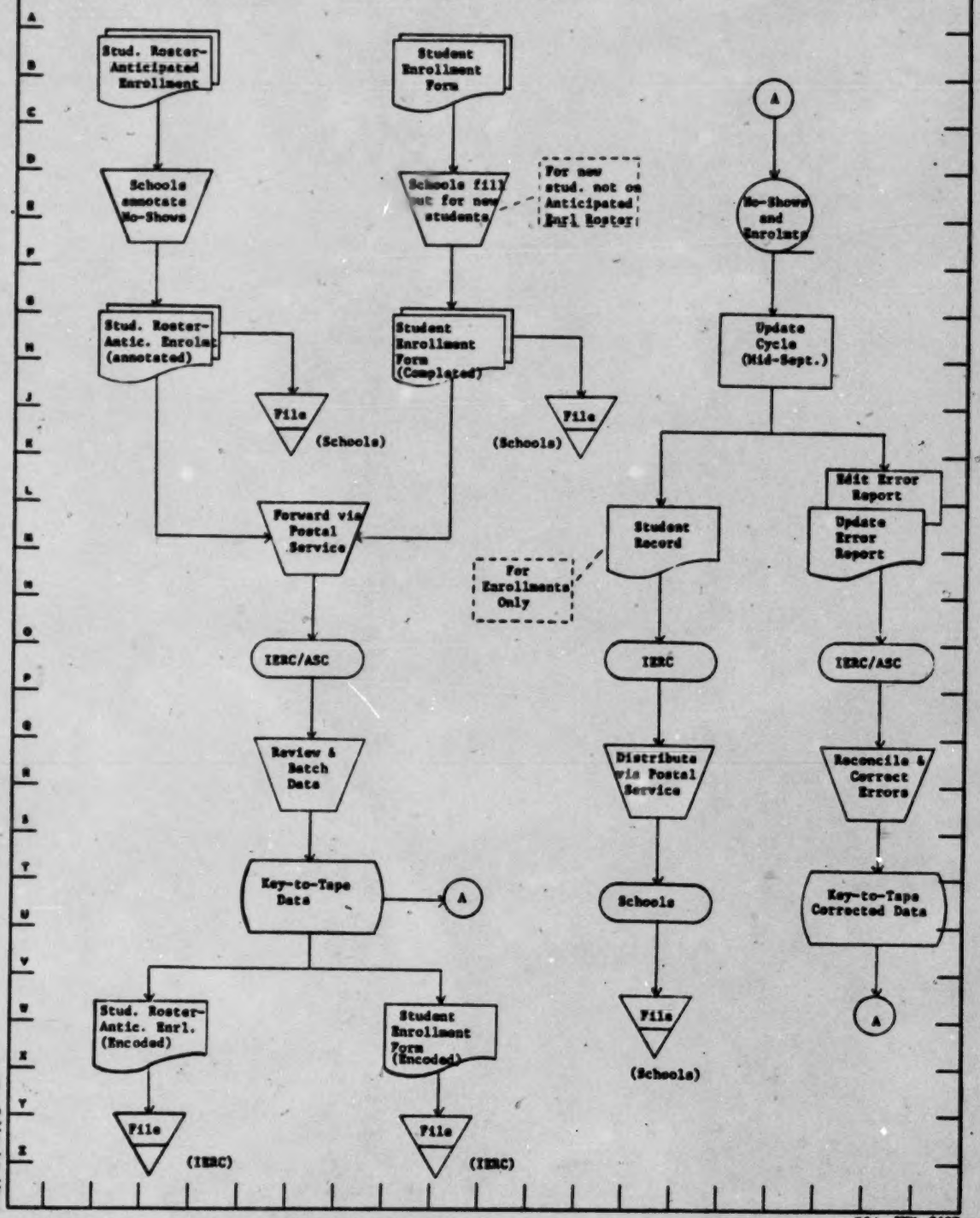
ADP DIAGRAMMING AND CHARTING WORKSHEET

GENERAL SERVICES ADMINISTRATION

APPLICATION: BIA - SES Document Flow

PROCEDURE: New - Year Enrollment Procedure

PAGE: 1 of 1



GSA JFL 965B

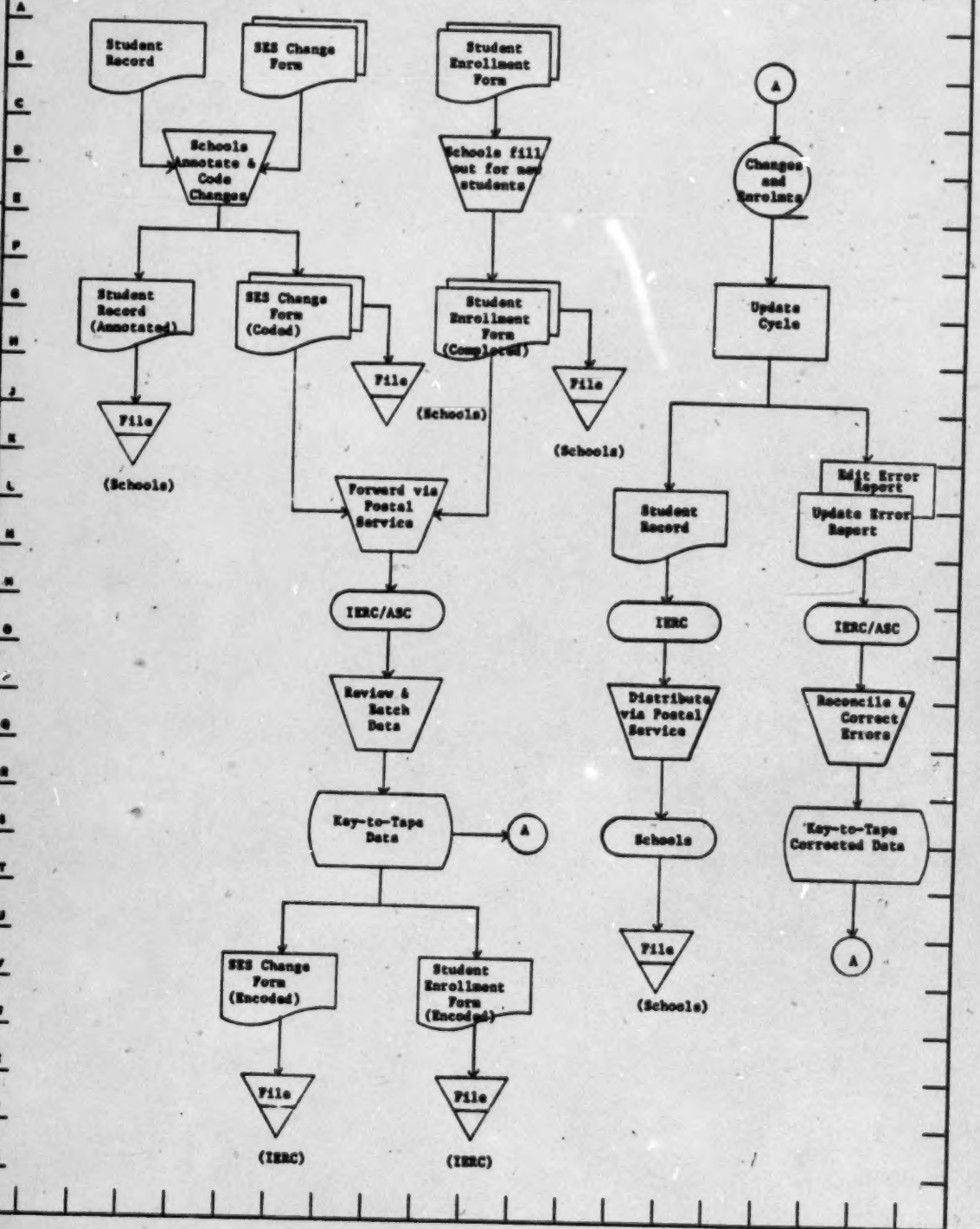
ADP DIAGRAMMING AND CHARTING WORKSHEET

GENERAL SERVICES ADMINISTRATION

APPLICATION: BIA - SES Document Flow

PROCEDURE: Weekly Reporting Procedure

PAGE 1 of 1



GSA JTI: 965B

37

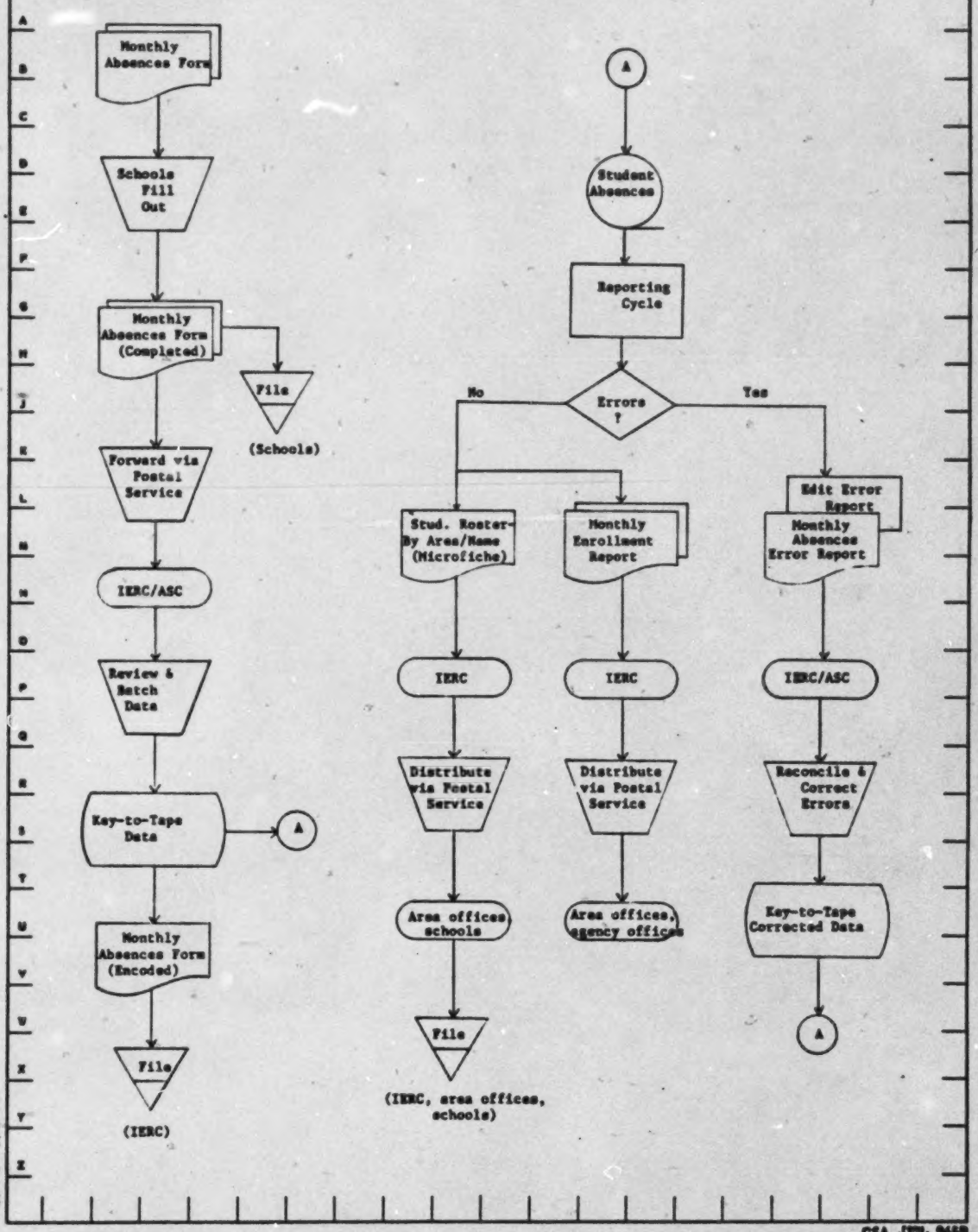
ADP DIAGRAMMING AND CHARTING WORKSHEET

GENERAL SERVICES ADMINISTRATION

APPLICATION: BIA - SES Document Flow

PAGE: 1 of 1

PROCEDURE: Monthly Reporting Procedure



GSA JPL 965B

38

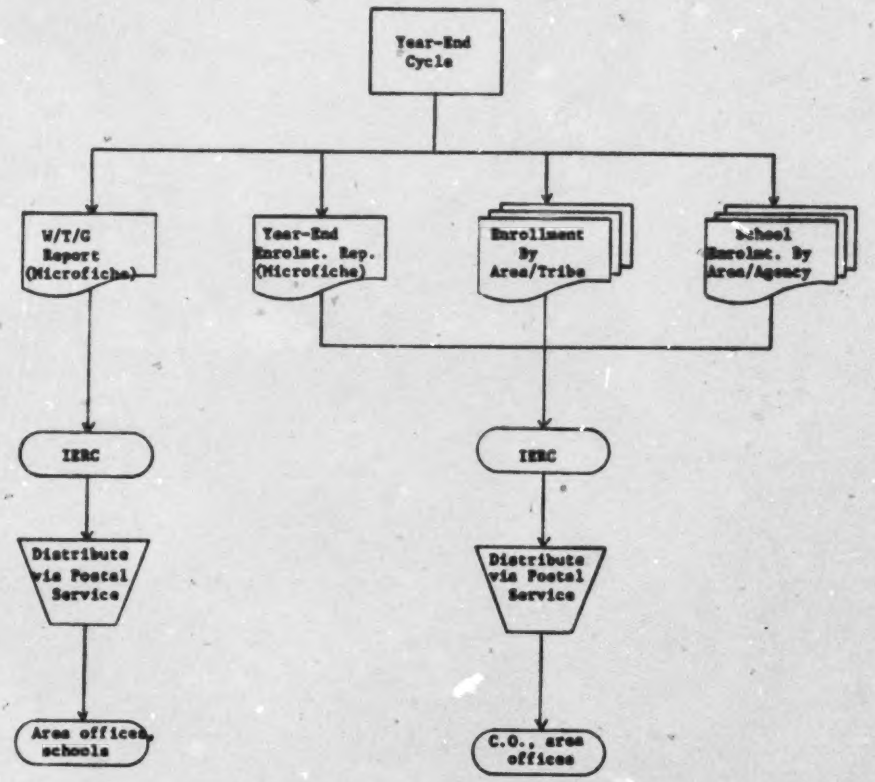
ADP DIAGRAMMING AND CHARTING WORKSHEET

GENERAL SERVICES ADMINISTRATION

APPLICATION: BIA - SES

PAGE: 1 of 1

PROCEDURE: Year-End Procedure



39

GSA JPN 965B

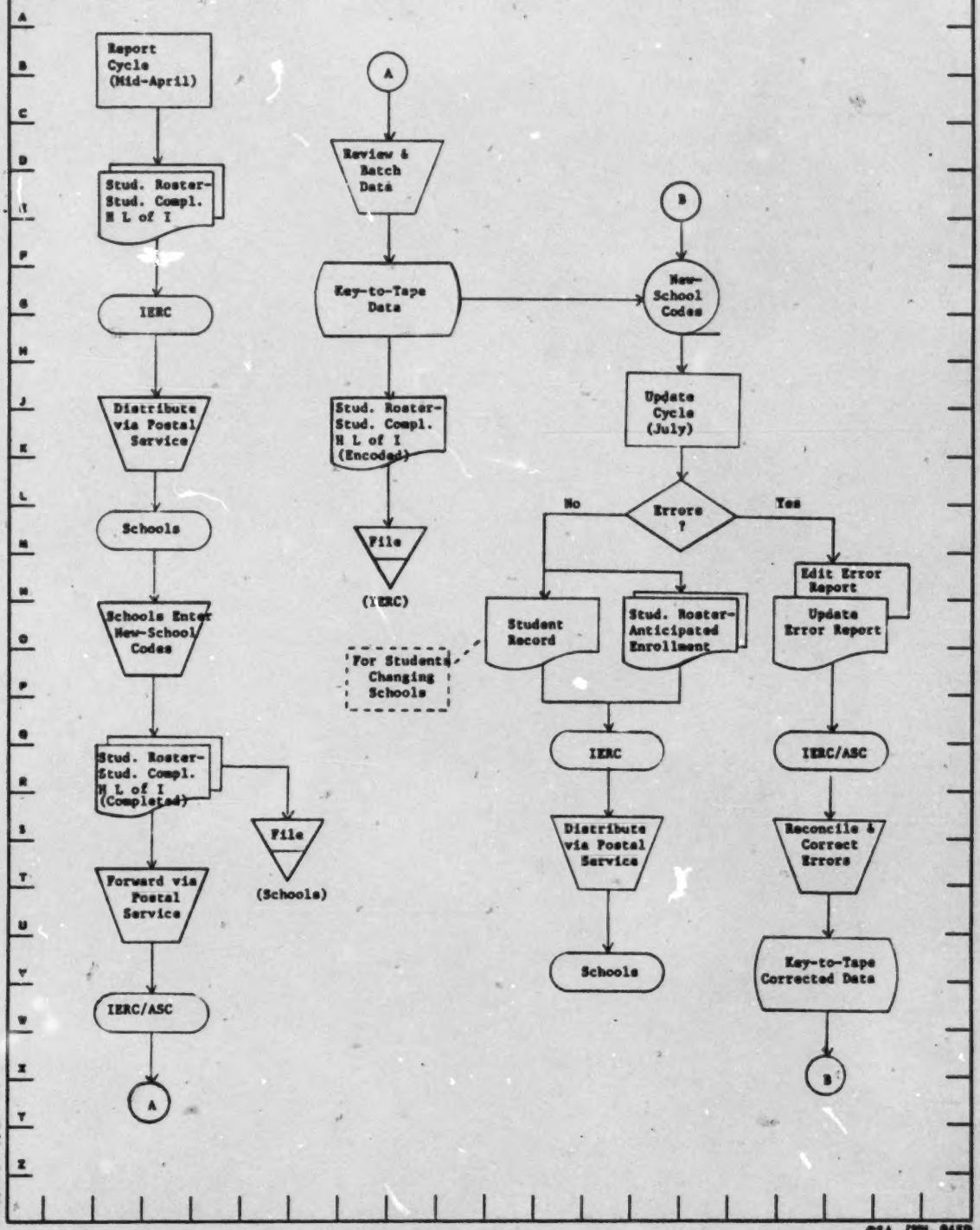
ADP DIAGRAMMING AND CHARTING WORKSHEET

GENERAL SERVICES ADMINISTRATION

APPLICATION: BIA - SES

PAGE: 1 of 1

PROCEDURE: Next School Year's Anticipated Enrollment Procedure



GSA JTN 965B

E. COMPUTER OUTPUT MICROFORM - ANALYSIS AND RECOMMENDATIONS

RECOMMENDATIONS

For the reasons discussed in the analysis section, GSA recommends that:

1. BIA make COM (Computer Output Microform) an integral part of SES.

2. COM microfiche be used, rather than microfilm or aperture cards.

3. The following SES output be stored on microfiche:

   a) Student Roster by Area/Name
   b) Year-End Enrollment Report
   c) Withdrawal/Transfer/Graduation Report

   For additional information on the above output, refer to sections II-B, and II-C of this manual.

4. BIA contract with a reputable COM Service Bureau (preferably in Washington) to secure COM capability. In negotiating this contract, it is of vital importance that BIA ensure compatibility between the Service Bureau's COM unit and the USGS 360/65 tape units in Washington.

5. A simple microfiche reader be placed at each BIA school and area office, at IERC, and at BIA Central Office in Washington, DC. In selecting these readers, BIA must ensure compatibility with the microfiche produced by the COM Service Bureau.

6. BIA utilize its present microfiche reader-printer in Albuquerque, for the purpose of printing paper copies of desired microfiche images (rather than acquiring additional reader-printers for use by area offices and/or schools).

7. BIA conduct microfiche education/training for the employees who will be the actual users.

8. BIA provide control over who sees various student information by controlling access to the microfiche and the microfiche readers.

ANALYSIS

INTRODUCTION

Among the important elements in the design of an information system are determining what information should be generated, who should have access to that information, how the information should be disseminated, how the information should be stored and retrieved, how frequently the information should be updated, what the costs of providing the information should be, and, most importantly, determining the true needs of the ultimate user of the information.

In making these determinations, one should be aware of as many alternatives as possible, including the latest technological advances. COM (Computer Output Microform) is one alternative which should not be overlooked. The term microform refers to any of the following: microfilm (16-mm or 35-mm roll film), microfiche (82.5-mm or 105-mm film which has been cut into rectangular units, called fiche), or aperture cards (35-mm microfilm strips mounted in the apertures of punched cards). COM units read data directly from computer magnetic tape and produce microform as output via high-speed photography of display-screen images.

REASONS FOR CONSIDERING COM

Although technology for technology's sake does not justify the use of COM, or anything else for that matter, there are several good reasons for considering the use of COM in an information system. Some of the more important reasons follow.

1. Reduction in Computer and/or Printer Time. Modern COM equipment can print on microform as rapidly as magnetic tape can transfer the data. In fact, COM is 10 to 30 times faster than the conventional computer line-printer. One densely-packed reel of tape would require about two hours of line-printer time to print on paper, for example, but only six minutes of COM time to print on microfilm. A natural consequence of this increase in speed is a significant decrease in computer time costs.

2. Reduction in Material Cost. Computer stock-paper prices to the Government rose approximately 200 per cent from FY 74 to FY 75. In addition, paper supplies have been in increasingly short supply. Unlike paper, an increased number of copies of COM costs less as the number of copies increases. For example, the cost of stock paper jumps from about $14.00 per thousand for one-part paper to approximately $98.00 per thousand for six-part paper. By contrast, a single 1000-page report on microfiche costs about $12.00, but six copies of this same report would cost only $15.00 on microfiche. If preprinted forms are used, savings are even

greater, because preprinted forms cost more than twice as much as stock paper. The COM recorder merely photographs a form design from a plate at the same time it photographs the computer tape information. In this way, forms are eliminated. Generally speaking, one can expect to realize a 50-90% paper savings with COM (for additional information, refer to "COM-vs-Paper Cost Analysis" in a later section of this analysis).

3. Savings in Handling and Distribution Costs. The labor required to move, burst, and decollate large paper reports is virtually eliminated with COM. Binding costs are also greatly reduced. For example, more than 3,000 pages of information can be packed in a microfilm cartridge for less than one dollar, compared to paper binding costs of more than $10.00 for the same number of pages. Savings in distribution costs are evidenced by the following example. A 3,000 page report on microfilm can be sent 2,000 miles by first class mail for 36 cents. The same report, printed on paper and sent by fourth class mail would cost $6.00. In summary, one can expect a 50% or more reduction in handling and distribution costs by using COM rather than paper.

4. Space Savings. The reduction in space required for filing and/or storing information is emphasized by the following example. One cartridge of 16-mm microfilm contains the same amount of information as a reel of magnetic tape or 2,500 pages of computer paper. The ratios of the relative volumes required to store this data on microfilm, magnetic tape, and paper are 1:8:50. Actual savings in storage costs depend on the user's unique circumstances, but they can run as high as 90%.

5. Retrieval Time Savings. The time required for retrieving and extracting information on microform is usually far less than that required for searches through massive stacks of printout. Retrieval techniques vary from sophisticated automatic retrieval coding marks (such as Miracode) on microfilm to straight-forward indexed retrieval with microfiche. Although retrieval speeds for microform can be comparable to speeds attained with an on-line computer system, retrieval time is generally 25 - 30% less than with paper.

6. More Current and Timely Information. Because less computer time is required to generate information via COM, reports and files may be updated more frequently at the same level of expenditure. Because reproduction costs are less, more copies may be distributed to more people, and because retrievals are

faster, the information may be used more often.

7. Plotting and Graphing Benefits. Scientific COM plotters offer the capability of plotting or displaying management-type data graphically, using standard software packages. Graphic summaries of large numeric data bases may prove far more usable than tables of individual data elements normally generated on a line printer.

DISADVANTAGES OF COM

A discussion of COM is not complete without a look at some of the disadvantages a user may encounter.

1. Need for Readers. One cannot carry a COM report around and show it to someone unless a reader is available. This means that if a user is considering a COM system, he must be prepared for an initial outlay for readers. Although readers are discussed later in this analysis, suffice it to say at this time that readers are relatively inexpensive and that their costs are generally recovered in the first-year savings on paper costs alone.

2. Need for Reader-Printers. One cannot write on COM. Many people are used to writing on paper reports, in red pencil, for example. Therefore, one or more reader-printers may be necessary in order to produce paper copies of selected pages that are stored on microform. Reader-printers, which are quite expensive, are discussed later.

3. Readers and Reader-Printers Take Up Space. Readers require desk or counter space, which may pose a problem in some situations. Most readers are semi-portable, however, so this is usually not serious. Reader-printers, on the other hand, may not be portable and may take up valuable filing space. This partially offsets the space savings discussed earlier.

4. User Education. People who are used to getting paper copies of a report may balk at the idea of suddenly receiving information on microfilm cartridges or on 4" x 6" strips with the intimidating name, "microfiche". These fears are usually overcome, however, once users are given the opportunity to retrieve information first-hand, via a microform reader. If COM has the support of middle management and line supervisors, other employees will usually accept it also. In fact, many new users of COM have reported that their employees are extremely enthusiastic about COM, and that both morale and productivity increased.

WHAT SHOULD BE PUT ON COM?

Not all reports or output should necessarily be placed on microform. In fact, determining what should and should not be put on COM is crucial to the implementation of a good information system. Strong candidates for COM include:

1. Reports which are voluminous. At present paper cost levels, single-copy reports in excess of 200 pages should receive COM consideration (refer to "COM-vs-Paper Cost Analysis" in a later section of this analysis).

2. Output that requires multiple copies. As stated earlier, one of the main attributes of microform is that it is self-reproducible. For example, a 4" x 6" microfiche master containing 270 computer pages of data costs about $3.00 to produce. Additional copies of this master cost only 15 cents each, however, and there is no limit to the number of copies that can be made at this price. By contrast, multi-part paper is very expensive, and one is limited to a maximum of six-part paper. In addition, the quality of the fourth, fifth, and sixth copies is questionable. Therefore, any report requiring multiple copies is a candidate for COM.

3. Output with wide distribution. Due to the savings in handling and distribution costs, any output that is to be disseminated should receive consideration.

4. Information that must be provided/updated frequently. Because of the reduction in time and costs, COM can be generated more frequently than hardcopy output.

5. Information requiring frequent look-up. With information retrieval times 25-30% faster with COM, any output that must be looked up frequently is a good candidate.

Regardless of the above guide lines, however, the final arbiter of COM utilization is the user. His unique requirements must be met.

APERTURE CARDS

The microfilm aperture card is primarily used for engineering drawings and related design documents. For this reason, plus the fact that aperture card readers are more expensive than microfiche readers, no further discussion of aperture cards appears in this COM analysis.

MICROFILM

Microfilm is generally supplied in 16-mm and 35-mm widths and may be stored on reels, magazines, or cartrides. Reduction ratios vary from

14X to 150X, with 14X to 24X being the most common range. A 100-foot roll of 16-mm microfilm, at a reduction ratio of 20X, contains approximately 2,500 computer pages of data. Microfilm usually has code marks or index marks to facilitate retrieval of desired images. The most commonly used marks are image count ("blips"), bar code, and Miracode (a sophisticated KODAK-patented retrieval method). Generally, the more sophisticated the retrieval code, the more expensive it is.

Microfilm readers vary greatly in price and in capabilities, from conventional roll readers (hand-cranked) costing as little as $120.00, to motorized readers costing as much as $1,700.00. Universal Readers accept both 16-mm and 35-mm roll film, and many of them can also be adapted to accept microfiche as well. Although some are portable, most microfilm readers are desk-type and weigh approximately 25-30 pounds.

Reader-printers have the ability to not only read microfilm, but also to print paper copies of desired images. For the user who has the need to annotate certain reports or output, one or more reader-printers may be necessary. The costs of reader-printers are quite high, however, usually ranging from $1,000.00 to $3,000.00.

MICROFICHE

Microfiche is simply a rectangular sheet of microfilm containing multiple images in a grid pattern. It usually contains a title which can be read without magnification. Microfiche sizes range from 3" x 5" to 6" x 9"; the majority of microfiche used in the Government are 4" x 6". Reduction ratios vary from 20X to 150X (fiche with high reduction ratios are called ultrafiche), with 40X to 50X being the most common range. A 4" x 6" microfiche, at a reduction ratio of 20X, contains about 48 computer pages of data. At a ratio of 48X it contains approximately 270 computer pages, and at 150X it contains 3,200 pages. Although ultrafiche contains an incredible amount of data, it is also very expensive and requires special equipment. Therefore, reduction ratios in excess of 50X are seldom used. Retrieval of desired images is achieved very simply via a one-page index located at either the first or last frame on the microfiche. By referring to this index, the user can then locate any desired image by using a pointer on a grid located on the microfiche reader.

Microfiche readers are the simplest of the various microform readers in use, with prices ranging from $50.00 to $500.00. Most microfiche readers are desk-type and generally weigh from 15 to 55 pounds. Reader-printers are considerably higher priced, running in the neighborhood of $800.00 to $3,000.00.

MICROFILM VS MICROFICHE

There are advantages in both microfilm and microfiche. Microfilm can be produced somewhat faster than microfiche, and it normally contains more document output per reel (or cartridge) than a microfiche contains (thousands of images versus hundreds of images). Another advantage is that various types of retrieval coding techniques are available with microfilm. These range from the sophisticated KODAK Miracode System, which allows random type access, to "blip" type coding which provides sequential access. Retrieval time with microfilm, then, is slightly less than with microfiche.

The costs of producing microfilm and microfiche masters are essentially the same (approximately $11 per thousand images). However, duplicate copies of these masters usually cost less with microfiche than with microfilm (60¢ per thousand images vs. $1.65 per thousand).

Unitization is the greatest virtue and also the biggest problem of microfiche. It can be distributed, interfiled, and stored as required. Unrelated documents don't have to be included with the pertinent ones (as they do in a roll or cartridge system). One particular fiche unit may be in great demand, the next may have little or no demand. It is relatively simple to make as many copies as required of the desired fiche (as opposed to having to reproduce an entire roll of film). Microfiche is very simple and inexpensive to mail, since it [illegible] in a standard envelope. However, microfiche is also easier to misplace and lose.

An important advantage of microfiche is the fact that readers are less expensive than they are with microfilm. They are also simpler to operate and require less maintenance (primarily because of fewer moving parts). In fact, once a simple microfiche reader has been installed in good working order, there is little to go wrong. Bulbs or lamps are the most frequent maintenance items, and they are easy to replace.

Generally speaking, the use of roll film (microfilm) is diminishing at a rapid rate, not only because of the advantages of microfiche discussed above, but because of the emergence of more economical ways to produce microfiche.

SECURING COM CAPABILITY

There are three ways to obtain COM capability -- a user can buy a COM unit, rent a COM unit, or one can have a Service Bureau produce the microform from magnetic tape supplied by the user. If a user buys a COM unit, it costs in the area of $90,000 to $130,000. In addition, service from the vendor costs about $12,000 per year. If a user rents a COM unit, it costs about $3,200 per month, which includes service by

the vendor. Two good reasons for having in-house capability are that the user has control of security items and he can set his own priorities. A high volume of output is required, of course, to justify in-house capability.

If one goes through a COM Service Bureau, he pays only for services he requires. A Government user can expect to pay about $11 per thousand frames for microform masters, and from 60¢ to $1.65 per thousand frames for duplicate copies. Service Bureaus are advantageous in that they have experienced personnel who can "engineer" an application for a user and offer programing assistance for maximizing COM throughput. Most Bureaus will provide pickup and delivery service and make microform distribution for users (at extra cost, of course). Some Bureaus can also generate hardcopy prints of the filmed material.

COM-VS-PAPER COST ANALYSIS

The figures in the following table are based on GSA's current computer stock-paper costs and GSA's contract with a COM Service Bureau in Dallas, Texas. They reflect material costs only -- they do not include costs such as computer/printer time, distribution costs, etc. The COM figures are based on the use of 4" x 6" microfiche, at a reduction ratio of 48:1, with a maximum of 270 pages (269 data pages and a one-page index) per fiche.

BREAK-EVEN-POINT TABLE

PART PAPER	GSA PRICE PER SET	COM COST	NUMBER OF PAGES TO BREAK-EVEN
1 Part	$ .014	$ 3.00	215
2 Part	.024	3.15	132
3 Part	.046	3.30	73
4 Part	.062	3.45	56
5 Part	.078	3.60	47
6 Part	.098	3.75	39

INCREASE IN PAPER COSTS TABLE

PART	SETS	FY 74		FY 75		INCREASE	
PAPER	PER BOX	BOX	UNIT	BOX	UNIT	$	%
1 Part	2500	$ 9.80	$.0039	$34.00	$.0136	.0097	249
2 Part	1500	15.50	.0103	36.00	.0240	.0137	133
3 Part	950	15.50	.0163	44.00	.0463	.0300	184
4 Part	750	14.00	.0187	46.50	.0620	.0433	232
5 Part	600	15.40	.0257	47.00	.0783	.0526	205
6 Part	500	16.10	.0322	49.00	.0980	.0658	204

SES AND COM

The Student Enrollment System is an excellent candidate for COM. The backbone of the system is the Student Enrollment Master File -- a large data base requiring decentralized viewing at over 200 schools and area offices. This requirement in itself meets three important criteria for COM: voluminous output, output requiring multiple copies, and output with wide distribution. In addition, the master file will be updated frequently and will require frequent look-up.

Some of the reports called for by SES are also good candidates for COM. For example, the Year-End Enrollment Report and the Withdrawal/Transfer/Graduation Report are both quite voluminous (200-300 pages) and require wide distribution.

Another important factor with SES is the need for control over who sees various information. This can be achieved by controlling access to microform readers and the microform itself.

Lastly, the Bureau of Indian Affairs in Albuquerque is already experienced in the use of COM (and a COM Service Bureau) in their accounting and finance areas. BIA also has a microfiche reader-printer in Albuquerque. This equipment and experience serve as further impetus for utilizing COM in the Student Enrollment System.

III. General Program Logic

Three categories of programs are necessary to operate the SES:

- Data Manipulation
- Report
- File Maintenance

A. Data Manipulation Programs (DM)

These programs massage data prior to entry into the master file, perform actual update actions to the master file, and perform master file data moves based on pre-determined conditional requirements.

There are separate programs identified to perform the above processes. These programs will be created in a modular format based on specified edit criteria.

All submitted data will be collected in separate input files depending upon the type of transaction creating the data. It is from these files that the DM programs will access the submitted data.

1. Pre-Edit Program

This program will address all submitted data in each Transaction Input File. All format editing, cross - referencing with table data, and some conditional checks will be performed on the data. In order to perform the above editing processes, a complete set of input data for one student is stored in memory. Then, the edit process is begun.

Valid data is passed to a temporary input file for future updating to the Master File. Incorrect data is spun out to the Edit Error Report with corresponding error narratives.

The above procedure allows for minimum re-entry of student data, some of which was found to be in error.

There are instances, however, when valid data may be rejected. Certain transactions require multiple data entries. If one of the required entries is not present, the entire set of submitted student data may be rejected.

Format, cross-referencing, and conditional editing performed by this program is indicated in Section IV, Edit Criteria.

2. Update Program

This program will address each of the temporary input files created by the Pre-Edit program. Data in these files are considered to be valid. However, further conditional checks may cause rejection of certain data or an entire set of student data. Rejected data is spun out to the Update Error Report with corresponding error narratives.

It is this program that searches the Master File for file number compares. Section IV, Edit Criteria, specifies when it is allowable to have no File Number searches, as well as other conditional criteria.

3. Year-End Processor Program

This program will be run twice a year-after the last month's (May) normal Update/Report cycle, and during November to purge "No Shows". There are three major functions performed by this program:

- Increment the grade of each non 12th or 14th grade student who does not have a Completion Code of "N".

- Purge all students who have a W/T/G code entry in the current school information section. This condition indicates that the student has completed the 12th or 14th grade or has exited from the system with no knowledge of possible re-enrollment actions.

- Purge all student records which have a "NSH" entry in the W/T/G code block.

NOTE: The first two functions are performed at the year-end period. The third function is performed during late fall, possibly after the November monthly update/report cycle. All student records purged are spun out to the Inactive Master File.

B. Report Programs (RPT)

The primary factor to consider in creating a system such as the SES is to provide maximum benefit from minimum processing. For reporting purposes, this means passing through the large master file as few times as possible. This can be accomplished using the following procedures:

- Working storage arrays for counting.
- Report records with ID keys being spun out to output files.
- Formating modules to print (COM) the report records to an output media.

Reporting for the SES will be accomplished by one comprehensive program using the techniques described above. There will be one Master program accessing the master file, counting and producing report records. A second program will be used to output the report records to some media - printed copies and tapes for producing microfiche.

There are two important benefits to be considered in using the above approach for reporting.

- By use of request type records inputed to the Formating Modules at program run times, selectivity of desired reports could be accomplished - at any report run cycle, only the reports requested would be outputed.
- Future reports could be produced by adding modules to the two above programs.

C. File Maintenance Programs (FM)

There will be a separate program to update each of the supportive table files. These programs will be run on an as-demand basis.

An additional maintenance program will be available to access the master file - making changes necessary to ensure a valid file exists at all times. These changes would be beyond the scope of the normal update program - duplicate student records, invalid ID keys, etc.

IV. Edit Criteria

The edit criteria specified in this section is divided into three categories:

- Pre-Edit
- Update Edit
- Special Conditional Checks

A. Pre-Edit Processing (PE)

Data initially entering the system will be batched according to the type of transaction it represents. There are six transaction categories existing:

- Original Enrollments
- Re-Enrollment
- Change Actions
- Monthly Absences
- Anticipated Transfers
- New Year No-shows

Data for the above transactions will be collected in six separate input files. By processing each file independently, the Pre-Edit Program cannot only make format and table cross-reference checks, it can also perform certain conditional checks.

Edit requirements for most of the data blocks are specified in the User's Manual. Conditional checks are detailed in Part C of this section. The following information provides additional edit specifications for those data blocks which require more description than given in the User's Manual.

- File Number: Complete information for this block is given in the User's Manual. However, due to the importance of this particular data item, it should be re-emphasized here that upmost care should be given to the entry and use of this number. For format valid entries, no master file search for a corresponding file number will be performed in the Pre-Edit program. This function will be performed in the update program.

- Numeric Blocks: The fields listed below must contain numeric entries only.

  .. File Number

  .. Dates - All dates which have Data Block Numbers assigned, must be entered as Mo-Dy-Yr. A month or day entry less than ten must have a preceeding zero.

  .. Bus Route

  .. Bus Stop

  .. Zip Codes

  .. Degree of Blood

- Alphanumeric Blocks - no edit will be performed on the following blocks. All other alphanumeric blocks must confirm to the examples as shown in the User's Manual.

  .. All Name Blocks

  .. Address Blocks - home and city entries only. State codes must compare with entries in the State Code Table included in the User's Manual.

  .. Family Number

  .. Enrollment/Census Number

  .. Telephone Number

The following descriptive narratives will be printed, along with the incorrect entries on the Edit Error Report. In most cases, there will be two types of error conditions - 1) Format Errors (Alphabetic or Numeric); or 2) Not found in respective code table. Narratives for these two conditions are identified by "Incorrect Entry" and "Not in Table", respectively.

- Submitting School Code - Incorrect entry.
- File Number - Incorrect Entry
- Sex Code - Incorrect Entry
- State Code - Incorrect Entry
- Zip Code - Incorrect Entry
- Entry Date - Incorrect Entry
- Entry Type - Not in Table
- Grade/Year - Not in Table
- Student Type - Not in Table
- School Criteria - Not in Table
- Completion Code - Incorrect Entry
- Bus Route - Incorrect Entry
- Bus Stop - Incorrect Entry
- W/T/G Date - Incorrect Entry
- W/T/G Code - Not in Table
- BIA Prior School Code - Incorrect Entry
- Date of Birth - Incorrect Entry
- Birth Verify Code - Not in Table
- Birth State Code - Incorrect Entry
- Relationship Code - Not in Table
- Relationship State Code - Incorrect Entry
- Relationship Zip Code - Incorrect Entry

- Home Area/Agency/Location Code - Incorrect Entry
- Primary Tribal Code - Not in Table
- Secondary Tribal Code - Not in Table
- Degree of Blood - Incorrect Entry
- Data Block Number - Incorrect Entry

B. Update Edit Processing (UD)

The only editing performed during the update processing will be File Number searching and conditional checks. Both functions are described in Part C of this section.

C. Special Conditional Checks

The conditional checks described below will minimize incorrect data entry into the system. The format is based on the six transaction categories specified in Part A of this section.

1. Original Enrollments

a. Pre-Edit

1) All non-shaded data blocks, including the submitting school code, should have entries. The File Number will have been pre-printed on the Student Enrollment Form.

2) Any set of student data submitted which has a prime data block omitted, will be spun out to the Edit Error Report with the corresponding narrative - - "Original Enrollment-Prime Data Missing". The prime data blocks are as follows:

.. Submitting School Code

.. Surname - DBN 100

.. First Name - DBN 102

.. Sex - DBN 108

.. Home Address - DBN 110

.. City - DBN 112

.. State - DBN 114

.. Entry Date - DBN 120

.. Entry Type - DBN 121

.. Grade/Year - DBN 122

.. Student Type - DBN 123

.. Date of Birth - DBN 200

.. Home Agency - DBN 230

.. Primary Tribal Affiliation - DBN 232

.. Degree of Blood - DBN 236

- In addition to the presence of the prime data blocks, format and cross-reference editing is also performed on these inputs (excluding DB numbers 100, 102, 110, and 112). If any of the edited prime data blocks are found to be in error, the entire set is spun out to the Edit Error Report with the corresponding narrative - "Original Enrollment - Prime Data Error".

- If any of the other blocks are in error, only those errors are rejected. They are spun out to the Edit Error Report with applicable corresponding narratives specified in Part A of this section. The remainder of the data is forwarded to the temporary update input file.

b. Update Edit

No edit is performed by the update program. No File Number search is made in the master file. If the data exists in the temporary update input file, it is assumed a new student has enrolled, and his record is now created in the master file.

2. Re-Enrollments

a. Pre-Edit

1) The following blocks must have entries for each student data set. If any are missing, the entire set will be spun out to the Edit Error Report with the following narrative - "Re-Enrollment - Prime Data Missing".

- Submitting School Code
- File Number
- Entry Date
- Entry Type
- Grade/Year
- Student Type
- Prior School Code

2) If all the blocks above have entries but an error exists in any one of them, the entire set is rejected. It is spun out to the Edit Error Report with the corresponding narrative - "Re-Enrollment - Prime Data Error".

3) If an error exists in any additional blocks entered, only those errors are rejected. They are spun out to the Edit Error Report with applicable corresponding narratives specified in Part A of this section. The remainder of the data is forwarded to the temporary update input file.

b. Update Edit

Data residing in the temporary update input file (Re-Enrollment) will undergo the following conditional checks in the order shown below.

1) File Number Check

- Active Master File compare - go to Prior School check

- No Active Master File compare - to Inactive Master File check

- Inactive Master File compare - move record to active master file, and update with submitted data, performing no further conditional checks. Purge record from inactive master file and go to next record.

- No Inactive Master File compare - reject entire data set. Spin out to the update Error Report with the corresponding narrative - "Re-Enrollment - Cannot Locate Student".

2) Prior School Code Check

- Submitting School Code = Master File, Current School Code - go to normal update.

- Submitting Prior School Code = non-BIA School Code - go to normal update.

- Submitting Prior School Code = Master File current school code - go to normal update.

NOTE: If the last level above produces a non-equal condition, the entire student data set is rejected. It is spun out to the update Error Report with the corresponding narrative - "Re-Enrollment - School Code Errors".

3. Change Actions

a. Pre-Edit

All submitted data blocks will be processed using the edit criteria specified in Part A of this section. Additional restrictions apply to the following entries.

- Prior School Code - if this block entry is detected, it will be rejected. A record will be spun out to the Edit Error Report with the corresponding narrative - "Change Action - Prior School Code Entry Attempt".

- W/T/G Date and Code - both blocks must be present to complete the entry transaction desired. If only one is present, it will be spun out to the Edit Error Report with the corresponding narrative - "Change Action - W/T/G Error".

NOTE: The above two procedures have been provided to minimize the occurences of a school changing data on a student not attending that school, and to ensure a date and code are available for complete W/T/G transactions.

b. Update Edit

1) The following conditional checks will be made in the order shown below.

- File Number Submitted = File Number in Master File - go to submitting school code check.

- File Number submitted not found in Master File - entire set of changes for that student is rejected. It is spun out to the Update Error Report with the corresponding narrative - "Change Action - No File Number Match".

- Submitting School Code = Master File Current School Code - go to normal update process.

- Submitting School Code ≠ Master File Current School Code - entire set of changes for that student is rejected. It is spun out to the Update Error Report with the corresponding narrative - "Change Action - Submitting School Code Error".

4. Monthly Absences

   a. Pre-Edit

      The following check is made to data residing in the monthly absences input file, along with the respective error narratives.

      - Duplicate records - indicated by the presence of a Submitting School Code more than once. "Monthly Absences - Duplicate Records".

      NOTE: If duplicate records are found, they are all rejected, and spun out to the Edit Error Report with the above error narrative.

   b. Update Edit

      Monthly absences data is used for counting purposes only. Therefore, no updating actions are performed at all.

5. Anticipated Transfers

   a. Pre-Edit

      The only conditional check made on data in the Anticipated Transfer Input File will be for the presence of three entries per record. If any of the entries are omitted, the entire record is rejected. It is spun out to the Edit Error Report with the corresponding narrative - "Anticipated Transfer - Data Missing".

   b. Update Edit

      The following conditional compares must be made before a data record can be passed to the update process.

- Submitted File Number = File Number in Master File

- Submitting School Code = Master File Current School Code.

NOTE: If either of the compares above are not made, the entire record is rejected. It is spun out to the Update Edit Program with the corresponding narrative - "Anticipated Transfer - Incorrect Entry".

6. New Year No-Shows

a. Pre-Edit

The only conditional check made on data in the no-show input file will be for the presence of two entries per record. If either entry is omitted, the entire record is rejected. It is spun out to the Edit Error Report with the corresponding narrative - "No-show - Data Missing".

b. Update Edit

The same two conditional compares must be made to no-show data as is made to the anticipated transfer data. In case of record rejection, the narrative on the Update Error Report would be - "No-show - Incorrect Entry".

D. Input File Processing Order

The six transaction input files will be permanent data holding files. Prior to a normal update cycle, the files will have been blanked out. As the data is batch-transmitted from ASC, respective batches are loaded into respective files. After the Pre-Edit Program processes the data in each file, the valid data is spun out to respective temporary input files for updating. After the Update Program successfully processes each temporary input file, the corresponding permanent input files are blanked out. This procedure ensures only current data residing in input files to be processed.

Due to the conditional checks detailed in Part C of this section, which must be performed on submitted data, the permanent and temporary input files must be processed in the following sequence.

- New Year No-show File
- SES Change File
- Anticipated Transfer File
- Re-Enrollment File
- Original Enrollment File

NOTE: Since there are no update actions to perform on monthly absences, the monthly absences file will be processed last.

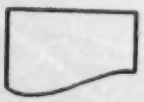
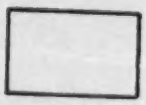
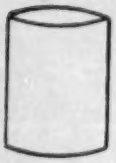
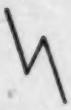
The manner of processing these files performed by the Pre-Edit and Update programs is as follows:

- Each file is opened and read. If an End-of-File is detected on the first read, it is assumed there were no transactions of that nature for that run cycle. The file is closed, and the procedure is repeated until all files have been processed.

V. GENERAL SYSTEM FUNCTIONAL FLOW

The following chart depicts the functional flow of data throughout the Student Enrollment System. Symbols used are explained in the legend below.

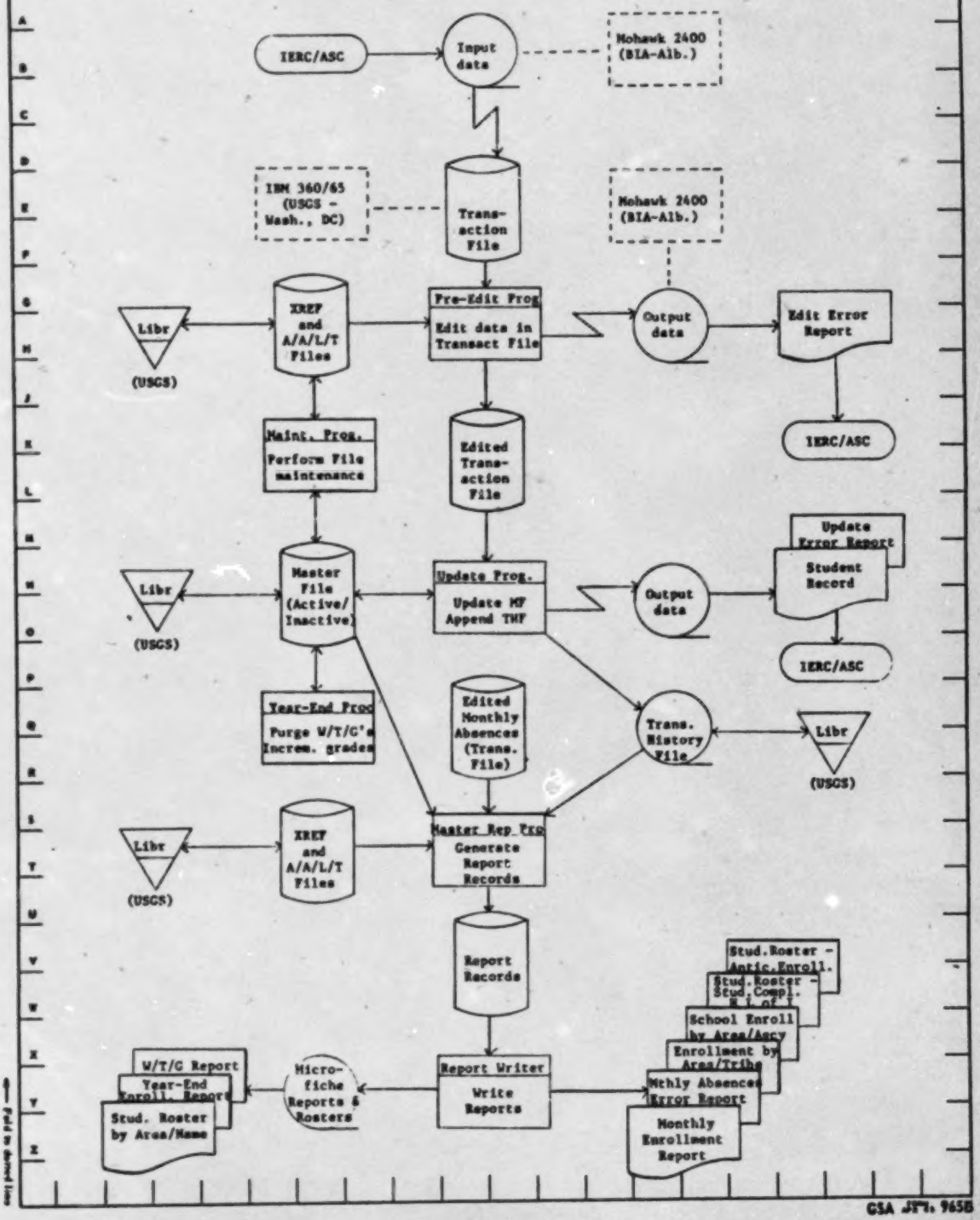
LEGEND

Symbol	Description
	Document
	Processing Function
	Magnetic Tape
	Magnetic Disk
	Communication Link
	Off-line Storage
	Location

ADP DIAGRAMMING AND CHARTING WORKSHEET

GENERAL SERVICES ADMINISTRATION

APPLICATION: BIA - SES General System Functional Flow



GSA JTR 965B

VI. FILE DESCRIPTIONS

This section contains descriptions and record layouts for the files necessary to operate and maintain the Student Enrollment System. These files include:

- SES Master File (Active)
- SES Master File (Inactive)
- SES Transaction File
- SES Transaction History File
- SES XREF Tables File
- SES Area/Agency/Location/Tribe Table Files

SES Master File (Active)

General Description:

The SES Master File (Active) will contain authorized enrollment information on all students enrolled in Bureau schools and boarding facilities. It will contain that information - and only that information - which is entered on the Student Enrollment Form and SES Change Form.

Purpose:

The Master File will serve as an up-to-date data base from which all student rosters and enrollment reports will be generated.

By generating student rosters - both microfiche rosters and anticipated enrollment rosters - the Master File will simplify the re-enrollment process at Bureau schools. By producing enrollment reports, the Master File will lessen the reporting burden at school, agency, area, and IERC levels. In short, the Master File will be the backbone of the Student Enrollment System.

Detailed Description:

Since it is estimated that only 500 student records (one percent of the total file) in the Master File will be updated weekly, the file lends itself to Indexed-Sequential organization. Such organization permits both sequential and direct processing of the file. The information below, and the record layout on the following page, provide a detailed description of the Master File.

Storage Media:	2314 Disk
File Organization:	Indexed-Sequential (I-S)
Key Length:	6 bytes
Record Length:	434 bytes
Blocking Factor:	8
Number of Records:	50,000
Space Calculations:	
Prime Area:	184 cylinders
Index Area:	5 tracks
Overflow Area:	2 cylinders

DATA PROCESSING MULTIPLE RECORD LAYOUT

JOB TITLE AND JOB CODE

RECORD FORMAT TITLE

☐ CARD ☐ TAPE ☒ OTHER (2314 Disk)

OUTPUT FROM

INPUT TO

REMARKS

BIA - SES MASTER FILE RECORD (ACTIVE/INACTIVE)

File Organization: Indexed - Sequential

Key Length: 6

Record Length: 434

Data Code: A - Alpha
N - Numeric
A/N - Alphanumeric

Key	Student Name				Student Address			
File No.	Surname	First	Middle	Suf	Home Address	City	State	Zip Code
6 N	26 A	11 A	9 A	3 A	35 A/N	14 A	2 A	5 N

0 10 20 30 40 50 60 70 80 90 100 114

Current School Information				(Adm. Crit.) (Comp. Code)								Prior-School Information				Enrolling School Code	Last Transact. Date	Birth Information				Relationship Information		
Curr. School Code	Entry Date Mo Dy Yr	Entry Type	Grd/Yr	St. Type	Bus Rt	Bus Stop	W/T/G Date Mo Dy Yr	W/T/G Code	Prior School Code	W/T/G Date Mo Dy Yr	W/T/G Code	Enrolling School Code	Last Transact. Date Mo Dy Yr	Date Mo Dy Yr	City	State	Last Name	First Name	Rel
5 A/N	2 N 2 N 2 N	3 A/N	3 A/N	2 A	2 N	3 N	2 N 2 N 2 N	3 A/N	5 A/N	2 N 2 N 2 N	3 A/N	5 A/N	2 N 2 N 2 N	2 N 2 N 2 N	14 A	2 A	26 A	11 A	3 A

114 124 134 144 154 164 174 184 194 204 214 224 237

Relationship Information (Cont'd)								Tribal Info. (Deg. of Blood)			Identification Numbers		Filler
Last Name	First Name	Rel	Home Address	City	State	Zip Code	Phone No.	Home Agency	Prim Trbl Aff.	Sec. Trbl Aff.	Family No.	Enroll/ Census No.	
26A	11 A	3 A	35 A/N	14 A	2 A	5 N	7 A/N	5 A/N	4 A/N	4 A/N	5 A/N	9 A/N	

237 247 257 267 277 287 297 307 317 337 347 357 368 434

GENERAL SERVICES ADMINISTRATION
OFFICE OF FINANCE AND ADMINISTRATION

GSA FORM FEB 64 2006

69

SES Master File (Inactive)

General Description:

The SES Master File (Inactive) will contain authorized information on all students who were previously enrolled in a Bureau school or boarding facility, but who withdrew from the school system or graduated from a Bureau high school.

This inactive master file, then, will be identical to the active Master File, in terms of record layout, but it will not contain the records of students currently attending Bureau schools.

Purpose:

The inactive master file is intended to help ensure that a student's file number and enrollment information are not lost as a result of his withdrawal or graduation from a Bureau school. By retaining the student's file number and most recent Bureau school information in this inactive file, the re-enrollment procedure for the student, should he decide to re-enroll in the system, is kept simple. Such an approach also helps ensure continuity of enrollment information.

Detailed Description:

The inactive master file will be organized in the same manner as the active Master File. The records in the inactive file will be laid out and blocked the same, also (refer to the record layout on the preceeding page). The number of records will, of course, grow at an estimated rate of 3,000 to 4,000 records per year.

To prevent the file from becoming unwieldy - and expensive - a file maintenance program will reorganize the file twice a year and purge old records at a specified date in the future.

Storage Media:	2314 Disk
File Organization:	Indexed-Sequential (I-S)
Key Length:	6 bytes
Record Length:	434 bytes
Blocking Factor:	8

	Year 1	Year 2	Year 3	. . .
Number of Records:	3,500	7,000	10,500	
Space Calculations:				
Prime Area:	13 cyl.	26 cyl.	39 cyl.	
Index Area:	1 tr.	1 tr.	1 tr.	
Overflow Area:	2 cyl.	2 cyl.	2 cyl.	

SES Transaction File

General Description:

The SES Transaction File is a temporary file which will contain input data generated by the following SES transactions:

- Original enrollments
- Re-enrollments
- Changes
- No-Shows
- Anticipated Enrollments
- Monthly Absences

Purpose:

The Transaction File will be used to update the Master File and, in conjunction with the Master File, to produce the anticipated rosters and the Monthly Enrollment Report.

Detailed Description:

Since transaction data will be transmitted from ASC's Mohawk 2400 to the USGS 360/65 via HASP, the transaction records will be in 80-byte, card-image format. Refer to the individual record layouts on the following page.

Storage Media:	2314 Disk
File Organization:	Sequential
Record Length:	80 bytes
Blocking Factor:	16
Number of Records:	Will fluctuate greatly during the school year (from 200 to 200,000)
Number of Cylinders	(based on 200,000 maximum records): 125

DATA PROCESSING MULTIPLE RECORD LAYOUT

JOB TITLE AND JOB CODE

RECORD FORMAT TITLE

☐ CARD ☐ TAPE ☒ OTHER (2314 Disk)

OUTPUT FROM-

INPUT TO

REMARKS

BIA - SES TRANSACTION FILE RECORDS

File Organization: Sequential

Record Length: 80

Data Code: A - Alpha
N - Numeric
A/N - Alphanumeric

Transactions:

- Original Enrollments
- Re-Enrollments
- Changes
- No-Shows
- Anticipated Enrollments
- Graduates
- Monthly Absences

"Original Enrollments", "Re-Enrollments", "Changes"

Submitting School Code	File No.	Field ID	Student Data Field	Filler
5 A/N	6 N	3 N	35 A/N	

0 10 20 30 40 50 60 70 80

"No-Shows", "Anticipated Enrollments", "Gra[illegible]"

Submitting School Code	File No.		NOTE: "No-Shows" contain Prior-School Codes. "Anticipated Enrollments" contain New-School Codes. "Graduates" contain W/T/G Codes.	Filler
5 A/N	6 N	5 A/N		

0 10 20 30 40 50 60 70 80

" Monthly Absences"

Submitting School Code	Reporting Period		Days in Sess	Aggregate Absences				Filler
				Day Stud.	Rdg Stud.	Dorm Stud.	Non-Bur. Stud.	
5 A/N	2 N	2 N	2 N	4 N	4 N	4 N	4 N	

0 10 20 30 40 50 60 70 80

GENERAL SERVICES ADMINISTRATION
BUREAU OF BUDGET AND ADMINISTRATION

23000-101

GSA FORM FEB 64 2006

SES Transaction History File

General Description:

The SES Transaction History File will contain records of key SES transactions affecting current and/or prior school information, particularly enrollments, transfers, and withdrawals.

Purpose:

This file will function as a backup transaction journal, and it will be used, in conjunction with the Master File, to produce the year-end Enrollment Report.

Detailed Description:

The Transaction History File will be a tape file which merely appends, on a chronological basis, incoming transaction records affecting the data fields specified in the record layout on the following page.

Storage Media:	Tape (1600 bpi)
File Organization:	Sequential
Record Length:	80 bytes
Blocking Factor:	100
Number of Records:	Will grow at a rate varying from an estimated 200 new records per week to as many as 4,000 new records.

DATA PROCESSING MULTIPLE RECORD LAYOUT

JOB TITLE AND JOB CODE

RECORD FORMAT TITLE

☐ CARD ☒ TAPE (1600 bpi) ☐ OTHER

OUTPUT FROM

INPUT TO

REMARKS

BIA - SES TRANSACTION HISTORY FILE RECORD

File Organization: Sequential

Record Length: 80

Data Code: A - Alpha
N - Numeric
A/N - Alphanumeric

Trans. Code	Trans. Date (Mo Dy Yr)	Submitting School Code	File No.	Current School Information: Curr School Code	Current School Information: Entry Date (Mo Dy Yr)	Current School Information: Entry Type	Current School Information: Grd/Yr	Current School Information: St. Type	Current School Information: W/T/G Date (Mo Dy Yr)	Current School Information: W/T/G Code	Prior-School Information: Prior School Code	Prior-School Information: W/T/G Date (Mo Dy Yr)	Prior-School Information: W/T/G Code	Filler
A/N	2 2 2	5 A/N	6 N		2 2 2	3 A/N	3 A/N	2 A	2 2 2	3 A/N	5 A/N	2 2 2	3 A/N	

10 20 30 40 50 60 70 80

GENERAL SERVICES ADMINISTRATION
OFFICE OF FINANCE AND ADMINISTRATION

GSA FORM FEB 64 2006

SES XREF Tables File

General Description:

The SES XREF (cross reference) Tables File will contain the field ID, code and description for certain data fields appearing on the Student Enrollment Form.

Purpose:

This file will serve two purposes:

- Editing of transaction data
- Printing out of field descriptions when desired

Detailed Description:

The following chart summarizes the XREF Tables File:

Field	Field ID	Code Format	Number of Codes	Length of Field Description
State	114	2A	50	20
Entry Type	121	3A/N	6	31
Grade/Year	122	3A/N	28	14
Student Type	123	2A	5	18
Adm. Criteria	124	1A	5	17
W/T/G Code	130	3A/N	14	44
Birth Verification	202	1A	6	32
Relationship Code	212/217	3A	18	32
			132	

Since this file is quite small (132 records), it will be organized sequentially and blocked as one physical record. The record layout follows on the next page.

Storage Media:	2314 Disk
File Organization:	Sequential
Record Length:	50 bytes
Blocking Factor:	132
Number of Records:	132
Number of Tracks:	1

DATA PROCESSING MULTIPLE RECORD LAYOUT

JOB TITLE AND JOB CODE

RECORD FORMAT TITLE

☐ CARD ☐ TAPE ☒ OTHER (2314 Disk)

OUTPUT FROM-

INPUT TO

REMARKS

BIA - SES XREF TABLES FILE RECORD

File Organization: Sequential

Record Length: 50

Data Code: A - Alpha
N - Numeric
A/N - Alphanumeric

XREF TABLES:

- State Codes
- Entry Type Codes
- Grade/Year Codes
- Student Type Codes
- Admission Criteria Codes
- W/T/G Codes
- Birth Verification Codes
- Relationship Codes

Field ID	Field Code	Field Description
3 N	3A/N	

0 10 20 30 40 50

GENERAL SERVICES ADMINISTRATION
OFFICE OF FINANCE AND ADMINISTRATION

23006-101

GSA FORM FEB 64 2006

SES/Area/Agency/Location/Tribe Table Files

General Description:

These table files correspond to the A/A/L/T Table described in the SES User's Manual.

Purpose:

These files will help provide data editing, the printing out of location and tribal names, the insertion of correct school-start dates in the Master File records, and the generation of "Student Roster - Students Completing Highest Level of Instruction".

Detailed Description:

Record layouts for these files follow on the next page. Note that the A/A/L/T Table has, in effect, been segmented into three distinct table files.

	Area/Agency Table File	Location Table File	Tribes Table File
Storage Media:	2314 Disk	2314 Disk	2314 Disk
File Organization:	I-S	I-S	I-S
Key Length:	5 bytes	5 bytes	4 bytes
Record Length:	36 bytes	80 bytes	55 bytes
Blocking Factor	100	90	130
Number of Records:	100 (est.)	200 (est.)	260 (est.)
Space Calculations:	1 track	3 tracks (est.)	2 tracks (est.)

DATA PROCESSING MULTIPLE RECORD LAYOUT

JOB TITLE AND JOB CODE

RECORD FORMAT TITLE

☐ CARD ☐ TAPE ☒ OTHER (2314 Disk)

OUTPUT FROM-

INPUT TO -

REMARKS

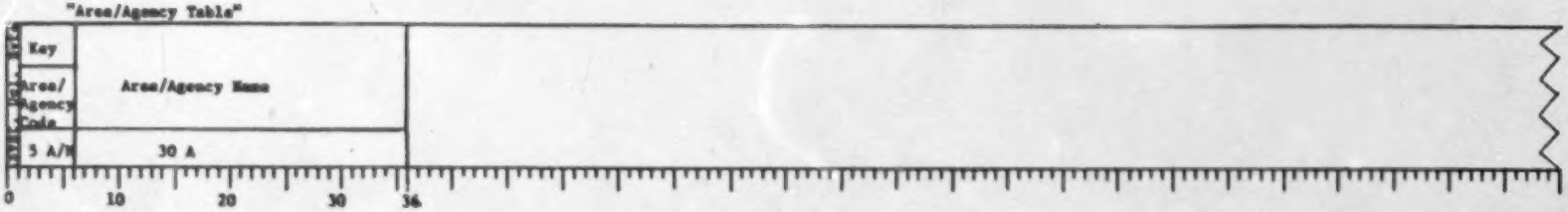
BIA - SES AREA/AGENCY/LOCATION/TRIBE FILES RECORDS

File Organization: Indexed - Sequential

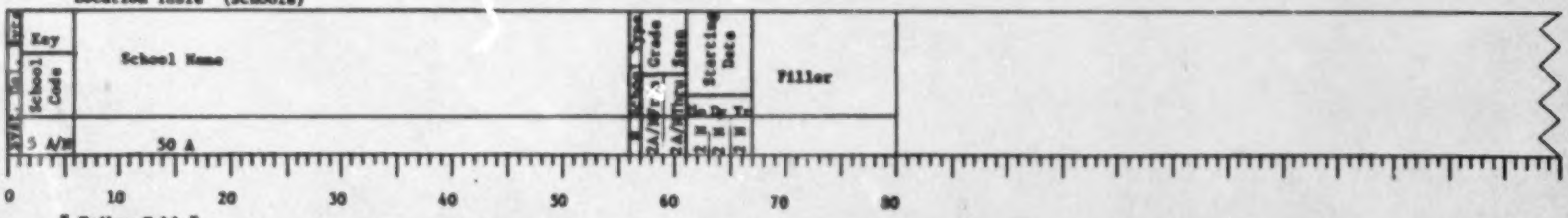
Data Code: A - Alpha
N - Numeric
A/N - Alphanumeric

Table	Key Length	Record Length
Area/Agency	5	36
Location	5	80
Tribes	4	55

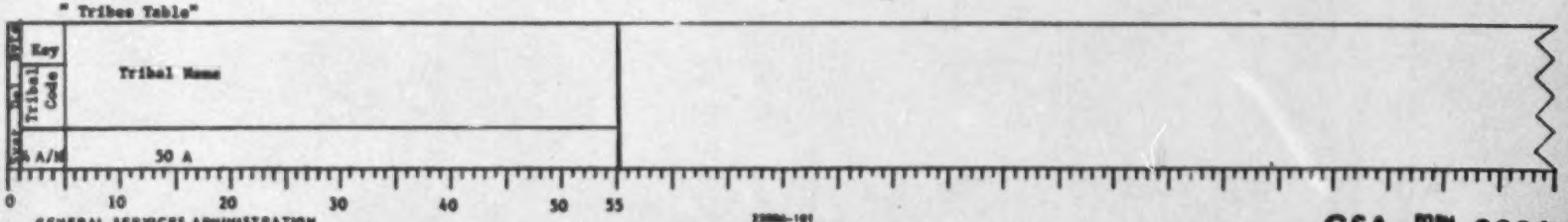
"Area/Agency Table"



"Location Table" (Schools)



" Tribes Table"



GENERAL SERVICES ADMINISTRATION
OFFICE OF SYSTEMS AND ADMINISTRATION

23006-101

GSA FORM FEB 64 2006

VII. IMPLEMENTATION PLAN

A. Implementation of the SES will be a seven step process with overlaping functions in several of the steps.

1. Forms Preparation and Delivery

a. Student Enrollment Form

1. Upon final approval by BIA, GSA will contract with a forms supplier to produce a specified number of these forms, with delivery to BIA being made within the time period specified below.

2. Time Periods

a. Final Approval - By February 3, 1975

b. Delivery to BIA - By March 1, 1975

b. SES Change Form, Monthly Absences Form, and Student Record

1. Final approval of these forms will be accomplished concurrently with the Student Enrollment Form. However, since these forms will not be required in the initial data collection effort, delivery dates will be later.

2. Time Periods

a. SES Change Form and Monthly Absences Form - No later than April 30, 1975

b. Student Record - No later than May 31, 1975

2. Data Collection Instructions

a. Materials necessary to conduct the first level of training will consist of the User's Manual and handouts for class room sessions.

b. Time Periods

1. User's Manual

a. Final Approval - By February 3, 1975

b. Delivery to BIA - By March 1, 1975

2. Class Handouts

a. Final approval - By February 21, 1975

b. Delivery to BIA - By March 1, 1975

3. First Level User Training

a. BIA and GSA personnel will conduct class room sessions for training BIA Area Representatives to administer second level user training.

b. Time Period - March 10 through 14, 1975

4. Second Level User Training

a. This will be a multiple task step - school representatives training, test data collection, and student data collection.

1. The BIA Area Representatives, who received instructions in the first level training session, will instruct their respective school personnel in the following procedures:

. Completion of Student Enrollment Forms on all students currently enrolled in their schools.

. Re-enrollment Transactions.

. Change Actions.

. Monthly Absences Reporting.

2. Test and Student Data Collection - Upon receiving necessary instructions, school personnel will begin transcribing student data to the Student Enrollment Forms. IERC will provide student data from selected schools to GSA for use in system program testing.

b. Time Period - March 10 thru 31, 1975.

5. Operational Instructions

a. Instruction materials for complete system operations will be provided to BIA by GSA. Due to the student data collection being performed when it is, operational instructions will be provided in a two-step phase:

. Key-to-tape Instructions

. Overall System Operation Instructions

b. Time Periods

1. Key-to-tape Instructions to BIA - No later than March 31, 1975.

2. Overall System Operation Instructions - No later than August 31, 1975.

6. Data Conversion

a. This will be a two-step phase:

- GSA will produce data to be used in creating all necessary table files.

- BIA -ASC will perform data conversion on student information. Test data from the pre-selected schools will be provided first. ASC will provide all student data in a master file f .

b. Time Periods

1. GSA (Table Files) - By April 30, 1975

2. BIA - ASC
   a. Test data - By May 5, 1975

   b. Remainder of student data - By July 31, 1975

7. Computer Processing

a. All student data will be processed with report examples being produced. An up-to-date master file will be available to begin the 1975-76 school year.

b. Time Period - Computer processing will be performed during the week of August 25 thru 29, 1975.